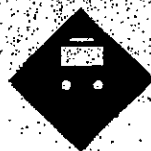


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Compendium of Technical Documents

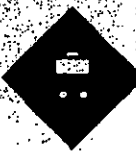
1995 through 1996

April 1999



I-66
CORRIDOR

**Major
Investment
Study**



DRAFT

RECORD COPY

Screen 3 Findings and Technical Recommendation of a Preferred Investment Strategy

October 14, 1993



Screen 3 Findings and Technical Recommendation of a Preferred Investment Strategy

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Background and Purpose

BACKGROUND AND PURPOSE

The I-66 Corridor Major Investment Study (MIS) is being jointly undertaken by the Virginia Department of Rail & Public Transportation (DRPT) and the Virginia Department of Transportation (VDOT) in association with a number of federal, state, and local agencies. The purpose of the I-66 Corridor MIS is to evaluate the need for, and to assess the benefits, costs, and impacts associated with, potential transportation improvement options to accommodate projected travel demands in the study area in the year 2020.

As illustrated on Figure 1, the defined I-66 Corridor MIS study area extends approximately 25 miles from the Capital Beltway (I-495) in central Fairfax County on the east to U.S. Route 15 in Prince William and Loudoun Counties on the west. The northern and southern boundaries of the study corridor are fairly narrow at the eastern end and broaden to the west to encompass the I-66 travelshed. Traffic congestion currently exists throughout much of the study area, particularly east of Route 50. Continuing growth in travel demand through the year 2020 is expected to exceed the capacity of the existing and planned transportation systems.

The I-66 Corridor MIS is being conducted to identify a Preferred Transportation Investment Strategy appropriate to address transportation issues in the corridor. The Preferred Transportation Investment Strategy will consist of an interrelated series of transportation system improvements designed to respond to projected travel demands associated with currently adopted land use plans, provide real transportation choices for study area residents, and better manage future transportation congestion problems.

As shown in Figure 2, the I-66 MIS has employed a multi-step screening process to develop and test the effectiveness of alternative transportation improvements in addressing projected Year 2020 transportation deficiencies. The final group of five multi-modal transportation strategies described in this document consist of combinations of various modes of transportation including: roadway improvements, bus service, rail transit service, and transportation system management improvements, as well as improved connections to pedestrian and bicycle facilities. All of these strategies assume that the public transit and roadway improvements identified in the current fiscally constrained long range transportation plan (CLRP) for the Washington Metropolitan Area would be in place by the year 2020. This means that the transportation service improvements included in the multi-modal strategies would be in addition to those contained in the current CLRP.

This document summarizes the performance of each of the five multi-modal strategies with respect to the evaluation criteria and measures of effectiveness identified for the Study to assess how well the strategies meet the established project goals. It also describes which strategy, or combination of strategies,

should form the basis for the development of the Preferred Transportation Investment Strategy.

The Preferred Transportation Investment Strategy described in this document is comprised of the best performing components of the five multi-modal strategies which were evaluated. The Preferred Transportation Investment Strategy is based on several different transportation modes, including roadways, expanded bus services, high occupancy vehicle facilities, and fixed guideway rail transit service. These different transportation modes provide a range of services to various parts of the study area in order to address both the needs of the study area as a whole, as well as those of the specific travel corridor in which they are located.

The I-66 Corridor MIS has been conducted in an open and inclusive process to encourage citizens, local jurisdictions, governmental bodies, and regulatory agencies to contribute their ideas for the future of the study area, and to participate in assessing the effectiveness of the various multi-modal strategies in meeting future study area needs.

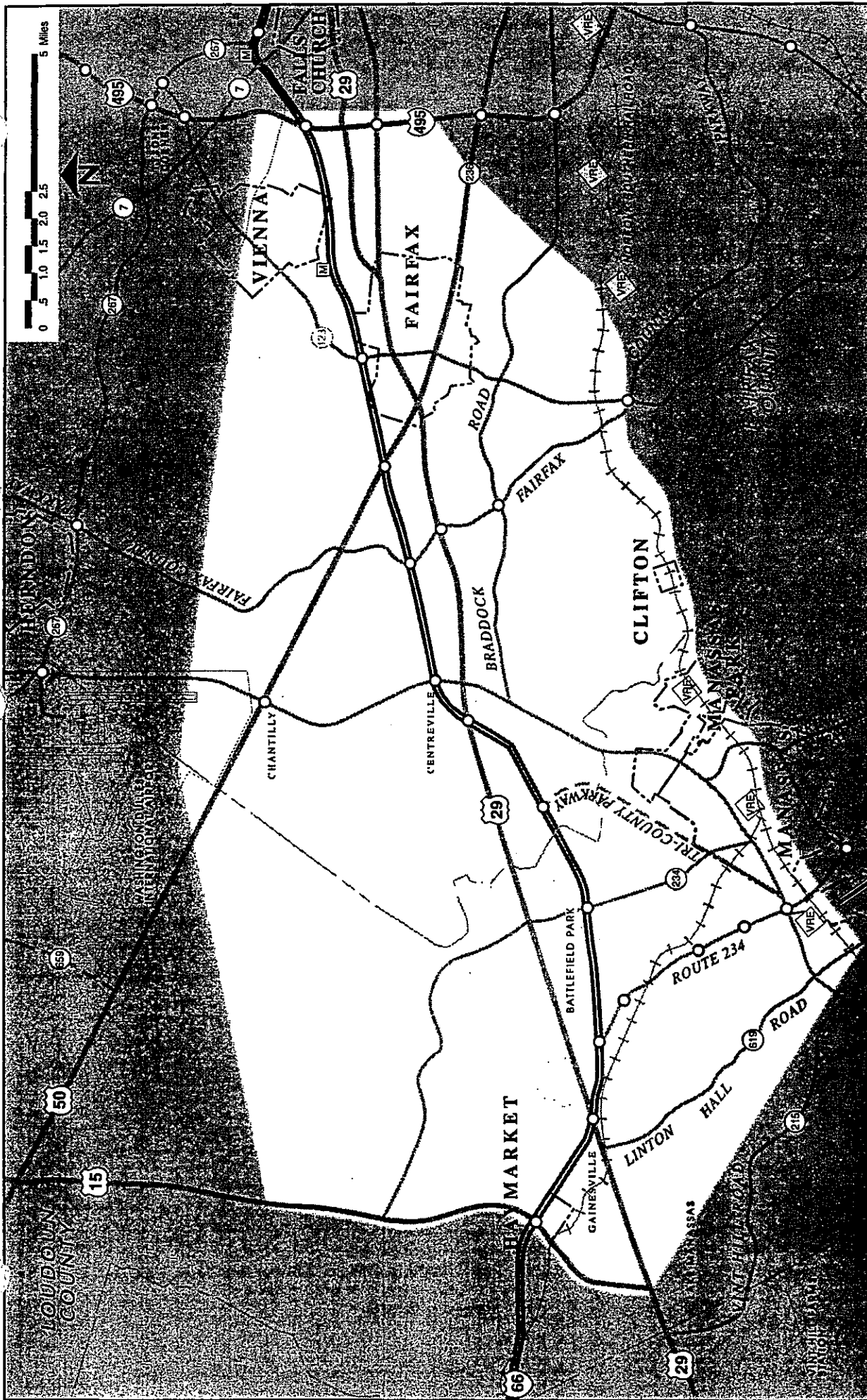
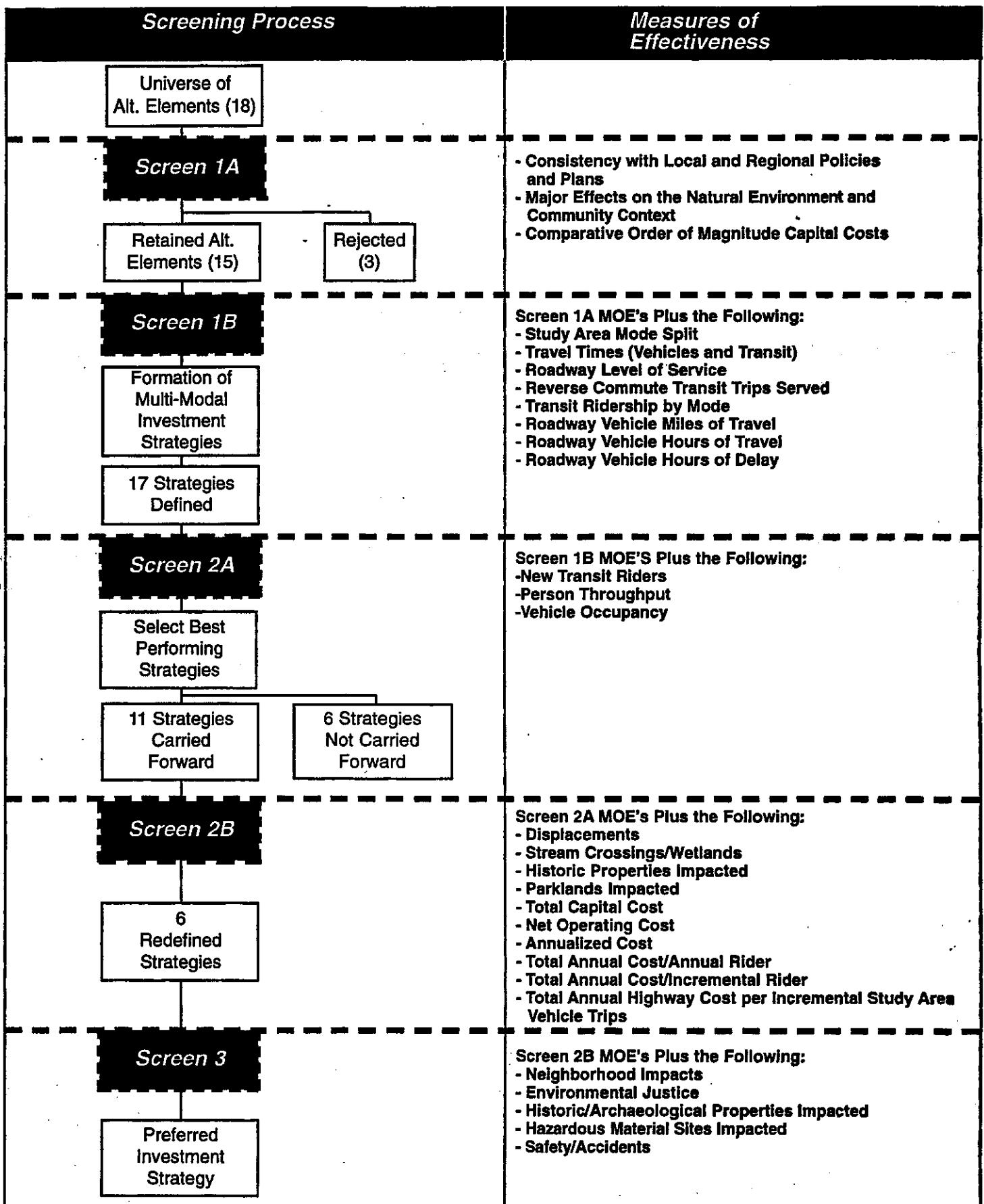


Figure 1
Study Area

I-66
 Major Investment Study

Figure 2

Overview of I-66 Corridor MIS Evaluation Process



Screen 3 Strategies

I-66
CORRIDOR

Major
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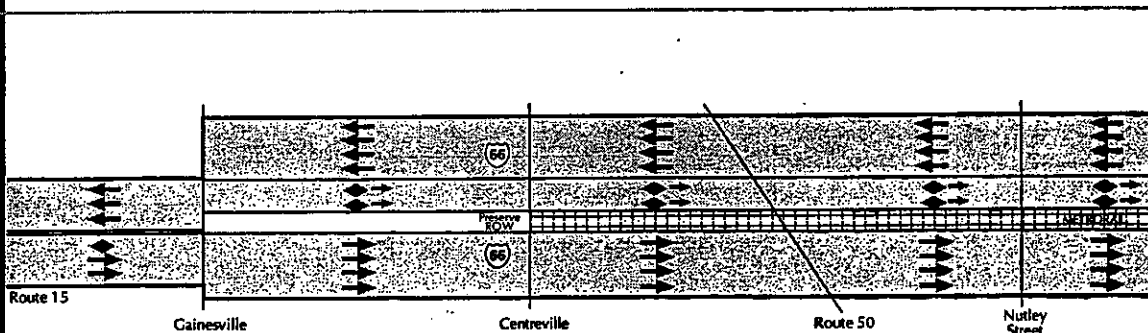
VDOT

June 15, 1998

AM Peak Period Lane Configuration on I-66

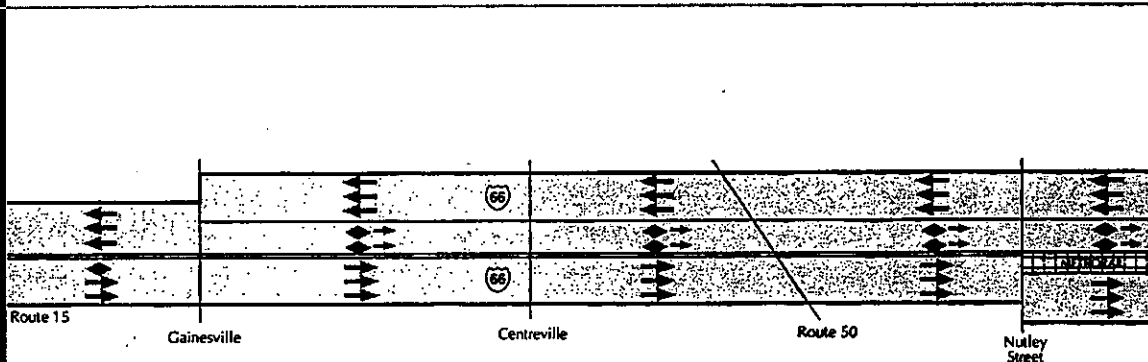
STRATEGY

3-D



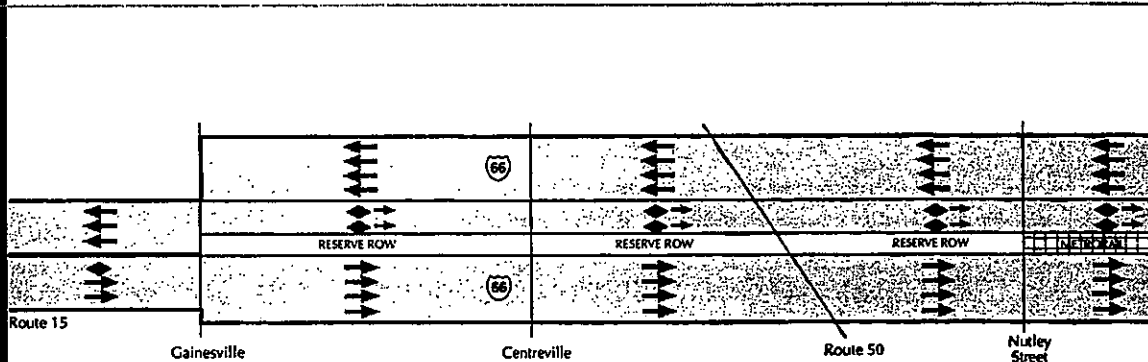
STRATEGY

3-E



STRATEGY

3-F



I-66
CORRIDOR

Major
Investment
Study



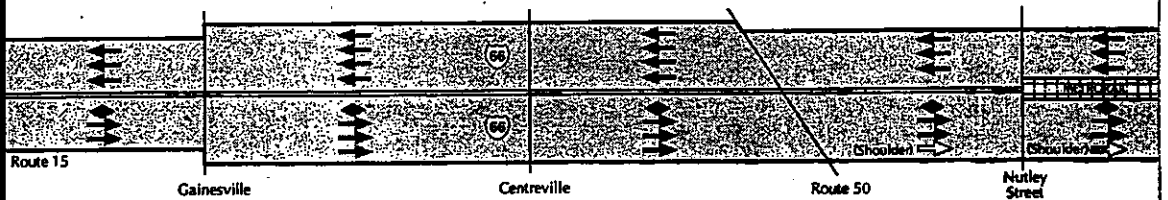
VDOT

June 15, 1998

AM Peak Period Lane Configuration on I-66

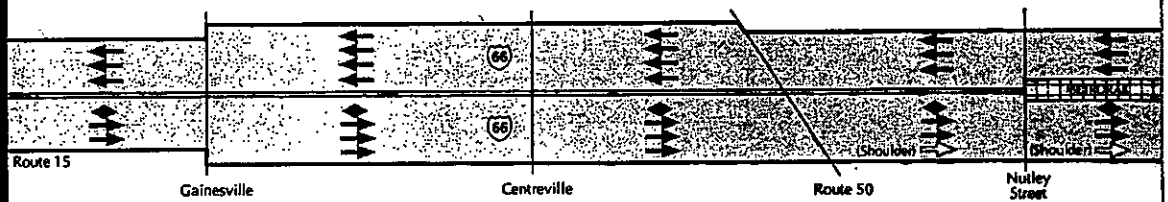
STRATEGY

3-A



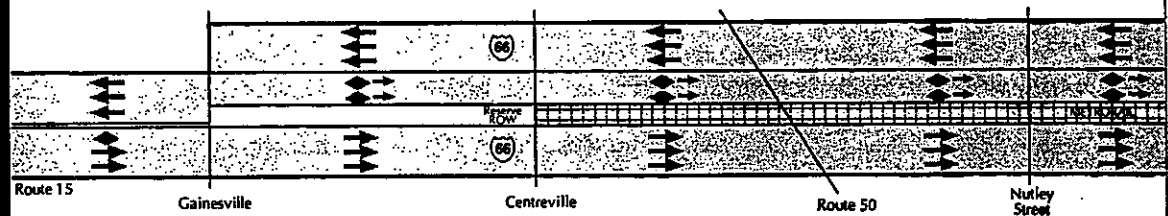
STRATEGY

3-B



STRATEGY

3-C



June 15, 1998

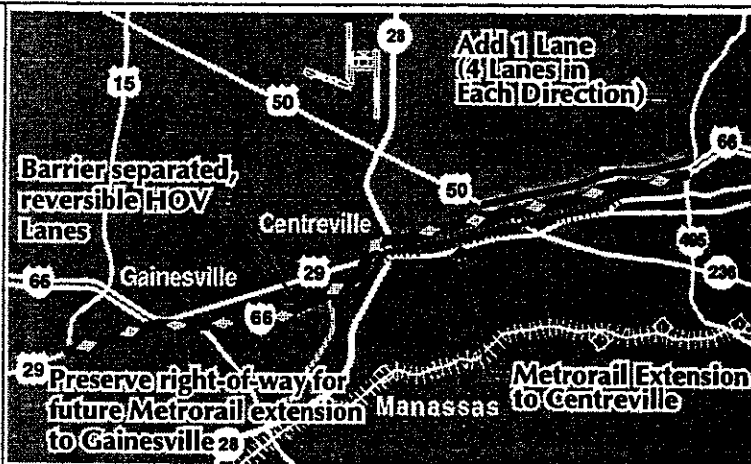
Screen 3 Strategies

Approved By Policy Advisory Committee on June 11, 1998

STRATEGY

3-D

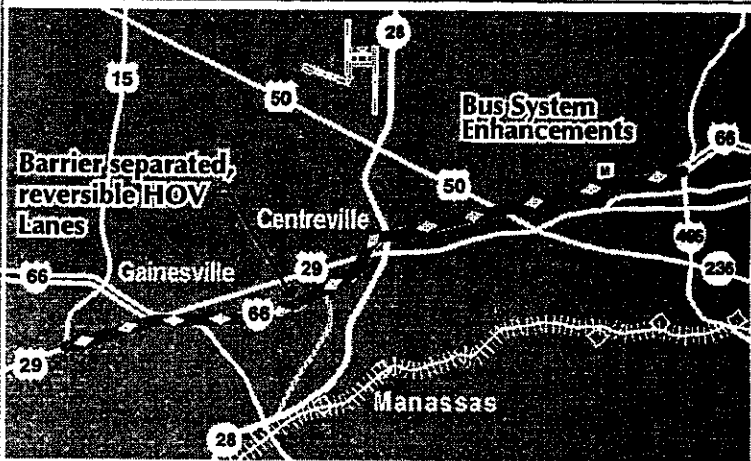
- Extend Metrorail to Centreville
- Preserve right-of-way to Gainesville
- Barrier separated, reversible HOV lanes on I-66
- Additional general purpose lane on I-66 between Route 50 and I-495



STRATEGY

3-E

- Barrier separated, reversible HOV lanes on I-66
- Best performing bus routes from Super Bus strategy
- No Metrorail extension/ROW preservation



STRATEGY

3-F

- Barrier separated, reversible HOV lanes on I-66
- Additional general purpose lane on I-66 between Route 50 and I-495
- Metrorail ROW Preservation Vienna to Gainesville



--- Key Findings

Table 3.1

SCREEN 3 SUMMARY OF ATTRIBUTES/MEASURES OF EFFECTIVENESS

EVALUATION CRITERIA	MEASURE OF EFFECTIVENESS	ATTRIBUTE	3-A Baseline (CLRP)	3-B Low Capital Cost Strategy	3-C Metro+HOV Lane on I-66	3-D Metro+HOV+ Lane on I-66	3-E HOV	3-F HOV+ Lane on I-66
GOAL #1 - ACCOMMODATE EXISTING AND FUTURE MOBILITY DEMAND								
Roadway Traffic Operations	Level of Service on Primary Study Area Roadways	PM Peak Period Directional Lane Miles with Volume to Capacity Ratio = 1.20 or Greater	166	165	144	139	155	143
		PM Peak Period Directional Lane Miles with Volume to Capacity Ratio = 1.00 or Greater	467	475	490	480	476	478
		PM Peak Hour Volume to Capacity Ratios North-South Screenline West of Fairfax City East-West Screenline North of I-66 I-66 West of I-495 I-66 West of Route 50	1.17 1.05 1.21 1.25	1.18 1.03 1.21 1.22	1.14 1.03 1.15 1.18	1.12 1.03 1.08 1.16	1.15 1.02 1.14 1.22	1.14 1.02 1.08 1.20
	Vehicle Miles of Travel on the Primary Study Area Roadways	2020 Average Daily Vehicle Miles of Travel (1,000's)	18,847	18,978	19,059	19,449	19,025	19,472
	Vehicle Hours of Travel on the Primary Study Area Roadways	2020 PM Peak Period Vehicle Hours of Travel (1,000's)	199	199	198	197	198	198
Vehicle Hours of Delay on the Primary Study Area Roadways	Vehicle Hours of Delay on the Primary Study Area Roadways	2020 Average Daily Vehicle Hours of Delay (1,000's)	120	119	114	111	115	112
		PM Peak Period Effective Speed (MPH)	26.0	26.2	26.8	27.5	26.7	27.4
	Vehicle Occupancy	Home Based Work Trip Vehicle Occupancy at North-South Screenline west of Fairfax City	1.191	1.185	1.195	1.182	1.196	1.180

EVALUATION CRITERIA	MEASURE OF EFFECTIVENESS	ATTRIBUTE	3-A Baseline (CLRP)	3-B Low Capital Cost Strategy	3-C Metro+HOV	3-D Metro+HOV+ Lane on I-66	3-E HOV	3-F HOV+ Lane on I-66
Transit System Ridership	Transit Patronage Forecasts by Mode	Total Corridor Related Transit Trips (1,000's)	46.7	67.1	72.7	72.8	66.9	67.4
	Primary Study Area Mode Split	Home Based Work Corridor Related Transit Trips	4.6%	6.5%	7.8%	7.8%	6.5%	6.6%
		Home Based Work Corridor to Core Transit Trips	31.1%	36.7%	44.7%	44.9%	36.7%	37.3%
	New Transit Riders	Total Regional Transit Riders (1,000's)	955	980	985	986	980	981
Mobility	Person Throughput	Daily Person Trips Crossing North-South Screenline West of Fairfax City (1,000's)	SOV 336 2-Person 125 3-Person 85 Transit 14 TOTAL 560	340 128 85 25 579	339 135 83 39 597	358 139 86 39 622	342 136 84 25 588	361 140 87 25 614
		PM Peak Period Person Trips Crossing North-South Screenline West of Fairfax City (1,000's)	SOV 52 2-Person 16 3-Person 13 Transit 4 TOTAL 85	52 17 13 7 89	54 19 13 11 98	58 20 13 11 103	55 20 13 7 95	59 20 13 7 100

EVALUATION CRITERIA	MEASURE OF EFFECTIVENESS	ATTRIBUTE	3-A Baseline (CLRP)	3-B Low Capital Cost Strategy	3-C Metro+HOV	3-D Metro+HOV+ Lane on I-66	3-E HOV	3-F HOV+ Lane on I-66
GOAL #2 - IMPROVE REGIONAL ACCESS TO I-66 CORRIDOR ACTIVITY CENTERS AND IMPROVE ACCESS FROM THE I-66 CORRIDOR TO THE REGION								
Accessibility	Door-to-Door Transit and Vehicle Travel Times Between Representative Origin-Destination Pairs Including Reverse Commutes (2020 Study Area Population equals 466,000)	% of Study Area Population within 45 minutes of Farragut Square via	SOV HOV Transit	10.6 58.9 11.4	10.2 59.4 13.7	10.2 62.4 25.9	10.2 63 25	10.2 63.0 15.3
		% of Study Area Population within 45 minutes of Tysons via	SOV HOV Transit	54.9 85.9 10.2	60.4 86.5 36.3	58.8 86.5 55.2	67.4 87.7 55.2	69.0 86.5 43.0
		% of Study Area Population within 30 minutes of Government Center via	SOV HOV Transit	75.7 83.4 29.1	76.5 86.5 46.4	75.7 87.7 65.9	80.0 87.7 67.5	80.5 87.7 53.3
	Reverse Commute Accessibility	Number of Reverse Commute Transit Trips Served						3,800
GOAL #3 - IMPROVE GOODS MOVEMENT								
Truck Travel Time	Travel time between selected O-D pairs	I-66 Travel Time between Gainesville and the Beltway (minutes)	49	48	40	41	45	40
GOAL #4 - COORDINATE THE TRANSPORTATION SERVICES TO COMPLEMENT EXISTING AND FUTURE LAND USE								
Land Use	Consistency with adopted plans	<p>City of Fairfax Comprehensive Plan supports:</p> <ul style="list-style-type: none"> - "Improved accessibility and capacity of the region's interstate routes, particularly I-66." - "The westward extension of rail service in the Dulles and I-66 corridors." <p>Prince William County Comprehensive Plan:</p> <ul style="list-style-type: none"> - "Extension of Metrorail within the I-66 and I-95 corridors." - "Installation of permanent HOV facilities is proposed between Fairfax County and Gainesville." <p>Fairfax County Comprehensive Plan:</p> <ul style="list-style-type: none"> - Identifies ten lanes on I-66 from the Beltway to Prince William County line. - Identifies HOV lanes on I-66. - Designates I-66 as an "enhanced public transportation corridor." 						
	Compatibility with existing land use and zoning							

EVALUATION CRITERIA	MEASURE OF EFFECTIVENESS	ATTRIBUTE	3-A Baseline (CLRP)	3-B Low Capital Cost Strategy	3-C Metro+HOV	3-D Metro+HOV+ Lane on I-66	3-E HOV	3-F HOV+ Lane on I-66
GOAL #5 - MINIMIZE THE ADVERSE TRANSPORTATION RELATED ENVIRONMENTAL IMPACTS AND FOSTER POSITIVE ENVIRONMENTAL IMPACTS WITH TRANSPORTATION IMPROVEMENTS								
Displacements and Relocations	The number of displacements of residential units, businesses, institutions and public facilities	With Barrier-Separated HOV on North Side Residential - Whole Takes	0	0	18	46	13	46
		Residential - Partial Takes	0	0	49	60	23	60
		Non-Residential - Whole Takes	0	0	0	0	0	0
		Non-Residential - Partial Takes	0	0	20	26	4	26
		With Barrier Separated HOV on South Side Residential - Whole Takes	0	0	3	6	1	6
		Residential - Partial Takes	0	0	67	94	23	94
		Non-Residential - Whole Takes	0	0	2	2	2	2
		Non-Residential - Partial Takes	0	0	24	26	4	26
Neighborhoods	Land use change, secondary development potential, traffic changes, neighborhood character, community cohesion, and introduction of new visual elements				Expansion / relocation of noise walls along I-66 Traffic, secondary development impacts near proposed Metrolink stations	Expansion / relocation of noise walls along I-66 Traffic, secondary development impacts near proposed Metrolink stations	Expansion / relocation of noise walls along I-66	Expansion / relocation of noise walls along I-66
Air Quality	The predicted change in VMT and the resultant effect on regional air pollution emissions (NOx, CO)	Incremental Change in Study Area Emissions relative to baseline (2020 Tons per Year) CO Nox	0 0	0 0	-4 0	-6 1	-3 0	-6 1
Aquatic Ecosystem/Water Resources	Number of stream Crossings	Four Stream Crossings on I-66: Long Branch, Bear Branch, Cub Run and Bull Run	0	0	4	4	4	4
	Acreage of wetlands impacted	With Barrier-Separated HOV on North Side With Barrier-Separated HOV on South Side	0 0	0 0	0 0	1 0	0 0	1 0
Historical Archaeological Properties	Number of Historic Properties Impacted	With Barrier-Separated HOV on North Side With Barrier-Separated HOV on South Side	0 0	0 0	1 0	1 0	0 0	1 0
	Acres of Historic Districts Impacted	With Barrier-Separated HOV on North Side With Barrier-Separated HOV on South Side	0 0	0 0	0 0	0 0	0 0	0 0

EVALUATION CRITERIA	MEASURE OF EFFECTIVENESS	ATTRIBUTE	SOURCE TABLE REFERENCE	3-A Baseline (CLRP)	3-B Low Capital Cost Strategy	3-C Metro+HOV	3-D Metro+HOV+ Lane on I-66	3-E HOV	3-F HOV+ Lane on I-66
Parklands	Acreage of Parkland impacted	With Barrier-Separated HOV on North Side With Barrier-Separated HOV on South Side		0 0	0 0	11 3	19 8	0 0	19 8
Contaminated Materials	Number of superfund sites, land fills, or underground storage tank sites impacted			0	0	6	6	0	6
Safety	Estimated number of accidents in Study Area by mode per year	Freeway Arterial Total		1,720 11,190 12,910	1,730 11,280 13,010	1,750 11,300 13,050	1,940 11,150 13,090	1,750 11,270 13,020	1,940 11,150 13,090
Environmental Justice	Neighborhood effects stratified by income and race	% Minority pop. in PW County % Minority pop. in PW County Median Income in PW County Median Income in PW County adjacent to I-66 % Minority pop. in FF County/FF City % Minority pop. in FF County/FF City adj. to I-66 Median Income in FF County/FF City Median Income in FF County/FF City adj. to I-66		NA NA	NA NA	16.7% 13.5% \$50,526 \$58,437 16.6% 15.4% \$63,597 \$59,570	16.7% 13.5% \$50,526 \$58,437 16.6% 15.4% \$63,597 \$59,570	16.7% 13.5% \$50,526 \$58,437 16.6% 15.4% \$63,597 \$59,570	16.7% 13.5% \$50,526 \$58,437 16.6% 15.4% \$63,597 \$59,570

GOAL #6 - PROVIDE A COST-EFFECTIVE INVESTMENT STRATEGY FOR THE I-66 CORRIDOR

NOTE: Figures are in addition to CLRP Investment

Capital Cost	Capital cost (millions of \$)	Table D-1	\$0.0	\$294.3	\$1,381.0	\$1,452.7	\$674.6	\$821.2
Net Operating Cost	Net operating cost (millions of \$)	Table E	\$0.0	\$4.07	\$10.62	\$11.75	\$4.81	\$5.85
Annual Cost	Annualized capital costs (millions of \$)	Table D-2	\$0.0	\$25.2	\$112.6	\$118.1	\$55.8	\$67.5
Cost Effectiveness	Total annual highway cost / Incremental annual study area vehicle trips	Table G	NA	\$0.30	\$6.45	\$2.61	\$6.61	\$2.54
	Total transit annual incremental cost / Incremental annual transit rider	Table G	NA	\$4.48	\$10.44	\$10.35	\$4.39	\$4.23

SOURCE: BRW, Inc. Desberry & Davis and KPMG

KEY FINDINGS

PRIMARY STUDY INPUT: STUDY AREA LAND USE AND SOCIOECONOMIC FORECASTS

Population:

1997: 269,000 persons
2020: 466,000 persons
An increase of 73%

Employment:

1997: 162,000 jobs
2020: 296,000 jobs
An increase of 83%

2020 PROJECTED TRAVEL PATTERNS ASSOCIATED WITH PLANNED FUTURE LAND USE

In General:

Total daily home-based work trips by study area residents will increase to 414,000 trips, an increase of 79%.

Daily home-based work trips attracted to destinations within the study corridor will increase to 378,000 trips, an increase of 83%.

By Market Segment:

Core and Suburban Maryland: Daily home-based work trips destined for Washington D.C. and the Maryland suburbs will increase from 86,000 in 1990 to about 118,000 in 2020. The majority of this increase is destined to the Maryland suburbs.

Trips to Tysons: Study Area daily home-based work trips destined for Northern Virginia locations outside of the I-66 study area will increase from about 52,000 in 1990 to 105,000 in 2020, an increase of 102%. About one-third of these trips are destined for the Tysons Corner area.

Intra-study area trips: In 1990, approximately 93,000 home-based work trips, or about 40% of the total generated in the study area, both originated and were destined within the study area. By 2020, approximately 191,000 trips, or about 46% of the total home-based work trips generated within the study area, will travel to work destinations within the study area. This is a 105% increase in the number of intra-corridor work trips.

Implications:

Increased travel demand through the year 2020 will place additional strain on what is already a generally overloaded and heavily congested transportation system in the study area.

Forecasted 2020 travel demand warrants additional modal capacity in all generally available modes in this area: I-66 general purpose lanes, I-66 barrier separated HOV lanes, extension of Metrorail to the vicinity of Centreville, and a substantially increased bus transit service for area residents and businesses.

MODAL ELEMENT SPECIFIC FINDINGS

General Purpose Lanes

Forecast 2020 PM peak hour travel demand on I-66 will exceed available capacity by 21 percent just west of the Capital Beltway and by 25 percent just west of Route 50 with the CLRP (Strategy 3-A).

If an additional lane were to be provided in each direction on I-66 between Route 50 and the Beltway (strategies 3-D and 3-F), the forecast 2020 PM peak hour travel demand on I-66 would exceed available capacity by 8 percent just west of the Capital Beltway and by 16 to 20 percent just west of Route 50.

If an additional general purpose travel lane were to be provided in each direction on I-66 between Route 50 and the Beltway, the forecast Year 2020 average daily traffic volumes on the parallel sections of Route 50 and Route 29 in the City of Fairfax would be reduced by about 5-6 percent from the projected CLRP conditions. Traffic volumes would be reduced relative to the CLRP forecast predominantly in the off-peak time periods

HOV

Current HOV 2+ travel demand in the concurrent flow HOV lanes on I-66 is approaching the capacity of the single HOV lane just west of the Capital Beltway.

The projected PM peak-hour, HOV 3+ travel demand in the single I-66 concurrent flow lane just west of the Capital Beltway will exceed available capacity by 16 percent with the CLRP (Strategy 3-A) and by 13 percent with the low capital cost strategy (3-B).

If the existing concurrent flow HOV lane is maintained, it will likely need redesignation to HOV 3+ in the near future to maintain a travel time advantage over the adjacent general purpose travel lanes.

If two barrier separated HOV lanes were to be constructed, they would be able to accommodate HOV 2+ travel demand until sometime prior to the year 2020 and could be converted to HOV 3+ to accommodate travel demand beyond 2020. However, the projected 2020 PM peak-hour, HOV 2+ travel demand in two barrier separated HOV lanes just west of the Capital Beltway will exceed available capacity by 6 percent (Strategy 3-F) to 15 percent (Strategy 3-C).

Barrier separated HOV lanes would provide VDOT with more flexibility to manage I-66 traffic flow (i.e. during maintenance activities, crashes or other incidents).

Metrorail

An extension of the Metrorail Orange line service (Strategies 3C and 3D) from Vienna to the vicinity of Centreville, is projected to carry approximately 30,000 passengers per day and would increase total ridership on the West Orange line by approximately 24,000 passengers per day relative to the CLRP (strategy 3-A) and by 18,000 passengers per day relative to the low capital cost alternative (Strategy 3-B).

The extension of Metrorail service will have no significant effect on the level of service experienced by traffic on I-66, Route 29 or Route 50. It will increase person throughput in the corridor by approximately 3,000 people (3 percent) in the PM peak hour and by 8,000 to 9,000 people (1.5 percent) on a daily basis.

Bus Transit Service

Screen 3 Strategies 3B, 3C, 3D, 3E and 3F incorporate significant increases in study area bus service. The CLRP bus system includes 50 peak hour buses in the study area; all of the other Screen 3 strategies include an expanded bus system with approximately 140 peak hour buses.

The increased level of bus service in the study area is forecast to generate approximately 20,000 additional daily bus trips.

The travel demand market for transit and HOV are generally independent; that is, increasing the supply for one does not significantly decrease the demand for the other.

CONSTRAINTS ON THE PROVISION OF TRAVEL CAPACITY

Right of way

Strategies 3-D and 3-F which include an additional general purpose lane in each direction, a 2-lane barrier separated HOV facility, and Metrorail in the median will have significant right of way impacts on the properties immediately adjacent to I-66, particularly in the area between Route 50 and the Beltway.

Strategy 3-C which includes a 2-lane barrier separated HOV facility, and Metrorail in the median but no additional general purpose lanes will have less right of way impact than strategies 3-D and 3-F.

Strategy 3E right of way impacts will occur east of the Vienna Metrorail station only.

There are differences in the number and type of properties impacted if the HOV facility is constructed on the north (westbound) or south (eastbound) side of I-66.

Potential right-of-way impacts in Fairfax County (Strategies 3D, 3F)

HOV lanes on eastbound I-66	69 residential and 13 commercial properties
HOV lanes on westbound I-66	86 residential and 11 commercial properties

Potential right-of-way impacts in Fairfax City (Strategies 3D, 3F)

HOV lanes on eastbound I-66	12 residential and 0 commercial properties
HOV lanes on westbound I-66	11 residential and 0 commercial properties

Potential right-of-way impacts in Prince William County (Strategies 3D, 3F)

HOV lanes on eastbound I-66	20 residential and 15 commercial properties
HOV lanes on westbound I-66	9 residential and 15 commercial properties

Most right-of-way impacts in Prince William County would be avoided if right-of-way for a Metrorail extension between Centreville and Gainesville were not preserved.

With the HOV lanes on westbound I-66, more park lands and public recreational facilities would be impacted. In particular, Yeonas Park, South Side Park, Ellanor C. Lawrence Park and Manassas National Battlefield Park would be impacted. The parking structure, surface circulation roads, surface parking and a power substation at the Vienna-Fairfax/GMU Metrorail station would be impacted.

With HOV lanes on eastbound I-66, there would be impacts to West Ox Road Park, Bull Run Regional Park and Mayhew Park. Surface circulation roads and surface parking facilities at both the Vienna-Fairfax/GMU and Dunn Loring

Metrorail stations would be impacted. A power substation at the Dunn Loring station would also be impacted.

Capital Cost/Funding (SUBJECT TO CHANGE)

Metrorail Extension to Centreville - \$800 million

Barrier separated HOV to Gainesville - \$150 million

Additional lane on I-66, Beltway to Route 50 - \$380 million

I-66 AND THE CAPITAL BELTWAY

****All traffic projects prepared for the I-66 MIS assume improvements to the Capital Beltway mainline and to the I-66 / I-495 interchange.**

Traffic analysis indicates that the most critical movement is from eastbound I-66 to northbound I-495 (towards Tysons). The current AM peak hour demand for this movement is approximately 2,300 vehicles per hour and the 2020 forecast is 3,700 vehicles per hour. The single lane ramp is currently operating at capacity and a two-lane directional ramp will be needed in the future.

With barrier separated HOV lanes on I-66 and HOV lanes on the Beltway as contained in the CLRP, direct HOV to HOV ramps will be needed to accommodate anticipated I-66 HOV movements.

LAND USE IMPLICATIONS

Existing land use development patterns and the cooperative land use forecasts derived from local comprehensive plans generate travel demands that exceed the capacity of the existing and planned transportation systems in the corridor and reduce the potential to provide additional transportation services with a reasonable level of cost and impact on the built environment.

Locating future Metrorail stations along I-66 is constrained by existing and planned uses for land along the corridor.

Development of a traditional terminal station for a Metrorail extension near Centreville is particularly challenging due to the projected parking needs (5,000 - 6,000 spaces) and the need for direct access ramps to I-66 for use by both private vehicles and buses.

The terminal station site identified in the Fairfax County Comprehensive Plan is constrained by steep grades, wetlands and floodplains.

In recognition of these constraints, the need exists to investigate other interim terminus station sites to the east and west of the Centreville area.

Technical Recommendation of a Preferred Investment Strategy

TECHNICAL RECOMMENDATION OF A PREFERRED INVESTMENT STRATEGY

Taking into account all of the preceding key findings, the I-66 Study Team concludes that a multi-modal strategy will be required to alleviate projected traffic congestion in the study area in the year 2020. The elements of the technically recommended Preferred Transportation Investment Strategy include: expanded general purpose travel lanes along I-66, expanded bus transit service, an extension of the Metrorail Orange Line beyond the current Vienna Station terminus, and the provision of a two-lane, barrier separated high occupancy vehicle (HOV) facility in the corridor. More detailed descriptions of each of these modal elements is presented below.

General Use Travel Lanes along I-66

- Add one (1) additional lane in each direction along the I-66 mainline from the U.S. Route 50 interchange east to the I-66 / I-495 interchange; reconstruct the Route 50, Route 123, and Nutley Street interchanges and other overpasses as necessary to accommodate the additional lane.
- Reconstruct the I-66 / I-495 interchange in accordance with the recommendations of the Capital Beltway MIS / NEPA study. The highest priority should be given to addressing the eastbound I-66 to northbound Capital Beltway movement towards the Tysons Corner area.

Bus Transit

- Increase peak hour bus service by 80-90 vehicles beyond the currently assumed CLRP level of 50-55 peak hour buses, for a total study area peak-period bus fleet of approximately 140 vehicles.
- Plan, design, and implement 4-6 suburban transit centers including centers at ultimate Metrorail station at Fair Oaks and Centreville and centers at Manassas and George Mason University.

Metrorail

- Based on previous action of the Policy Advisory Committee, pursue right-of-way preservation for a Metrorail extension in the I-66 median area from Vienna to Gainesville
- Plan, design, and implement an extension of the Metrorail system from the Vienna Station to the Centreville area, with proposed stations in the vicinity of Chain Bridge Road, Fair Oaks/Fair Lakes, Stringfellow Road, and Centreville.

High Occupancy Vehicle (HOV) Facilities

- Plan, design, and implement a two-lane, barrier separated HOV facility from the Capital Beltway to the area of the proposed Route 28 Bypass interchange with I-66.

Three very important points must be kept in mind when considering the implications of these recommendations:

1. All of the recommended facility and service improvements are beyond those contained in the currently adopted fiscally constrained long range transportation plan for the Year 2020.
2. The implementation of these recommendations will not totally alleviate projected study area traffic congestion in the year 2020. They will, however provide improved mobility for those who elect to carpool or use public transportation.
3. Complimentary actions such as the proposed improvements to the Capital Beltway and the proposed Tri-County Parkway will be needed in order to adequately accommodate projected east-west and north-south travel demands.

June 15, 1998

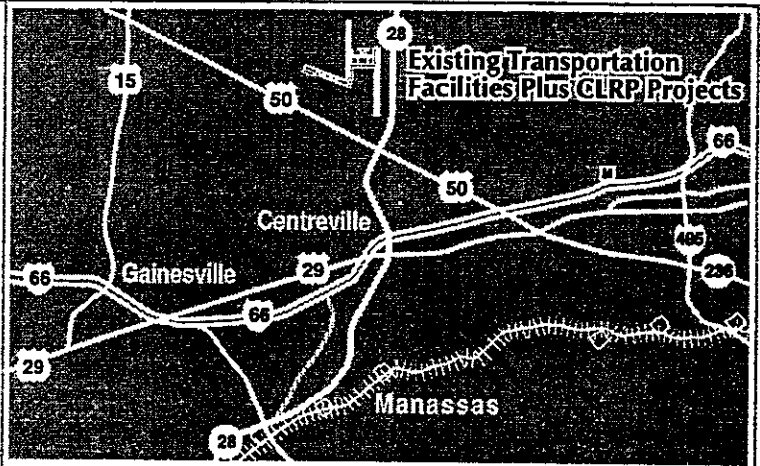
Screen 3 Strategies

Approved By Policy Advisory Committee on June 11, 1998

STRATEGY

3-A

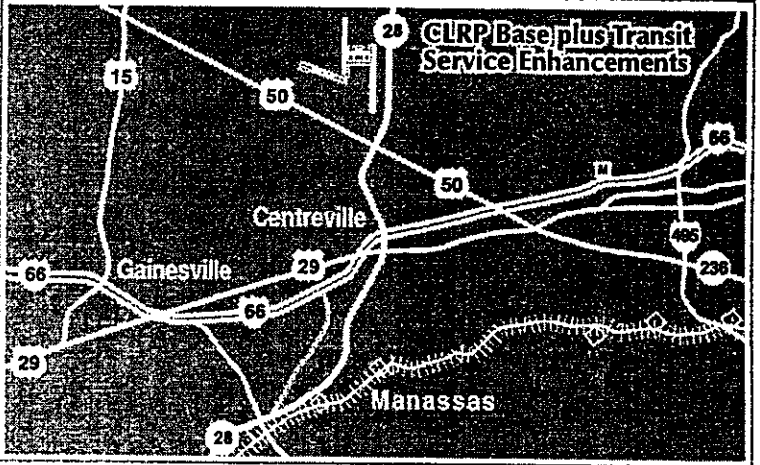
- **CLRP**
 - Includes an additional general purpose lane and concurrent flow HOV lane on I-66 between Route 234 and Route 29 in Gainesville.
 - Includes an additional general purpose lane on I-66 between Route 29 in Gainesville and Route 15.



STRATEGY

3-B

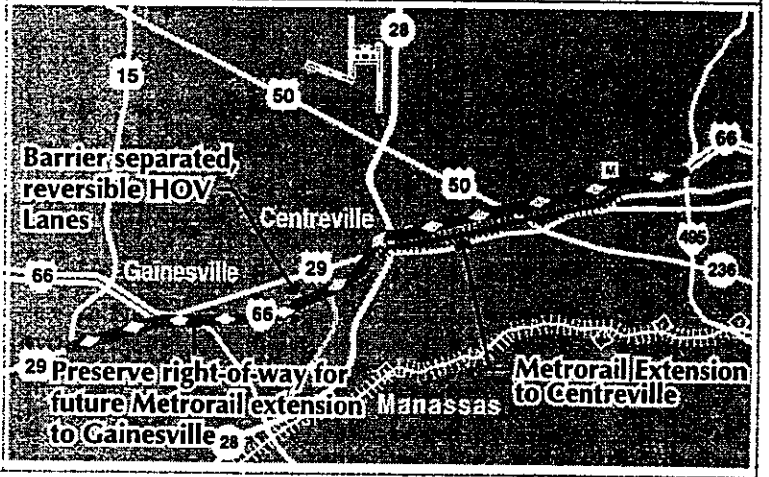
- **CLRP Base**
- **Transit Service Enhancements** (Bus, VRE, Metrorail)

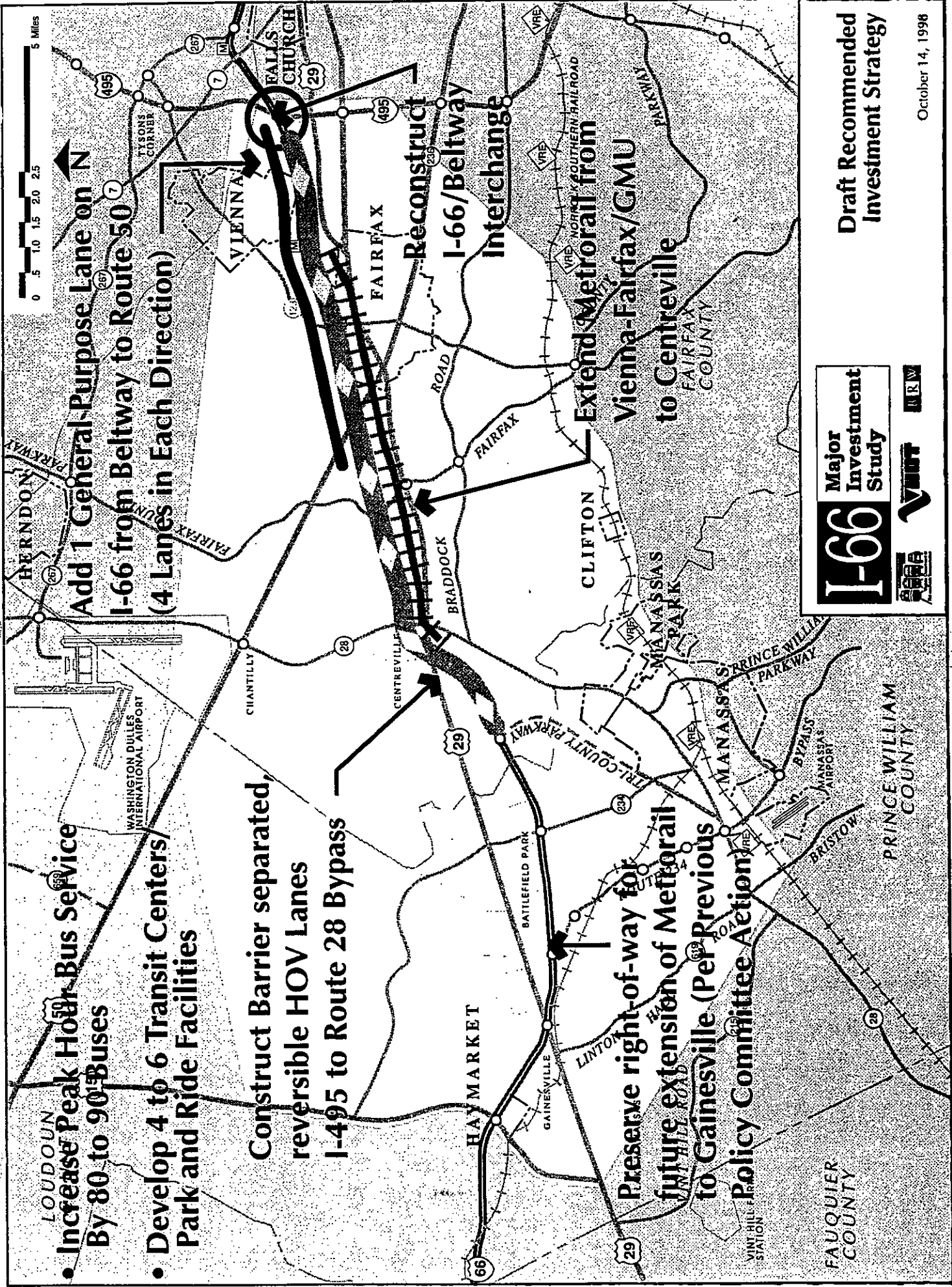


STRATEGY

3-C

- **Extend Metrorail to Centreville**
- **Preserve right-of-way to Gainesville**
- **Barrier separated, reversible HOV lanes on I-66**





- Increase Peak Hour Bus Service By 80 to 90% Buses
- Develop 4 to 6 Transit Centers/ Park and Ride Facilities

Construct Barrier separated, reversible HOV Lanes I-495 to Route 28 Bypass

Reconstruct I-66/Beltway Interchange

Extend Metrorail from Vienna-Fairfax/GMU to Centreville

Preserve right-of-way for future extension of Metrorail to Gainesville (Per Previous Policy Committee Action)

I-66
Major Investment Study

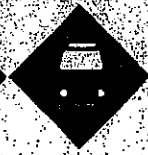
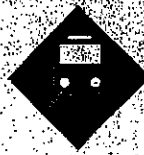
Draft Recommended Investment Strategy

October 14, 1996

Staging/Implementation Phasing

STAGING / IMPLEMENTATION PHASING

(This section under development)



Screen 3 Strategy Definition

August 19, 1998

Screen 3 Strategy Definition

Contents

Screen 3 Strategy Overview

Highway Element Refinement

HOV Elements

Bus Elements

Metrorail

--- Screen 3 Strategy Overview

SCREEN 3 STRATEGY DESCRIPTIONS

SCREEN 3 STRATEGY IDENTIFIER	PREVIOUS DESIGNATION	GENERAL DESCRIPTION	SPECIFIC ELEMENTS
3-A Baseline (CLRP)	3-0 Screen 2 Baseline	All improvements included in the most recent CLRP.	<ul style="list-style-type: none"> • Additional general purpose lane and concurrent flow HOV lane on I-66 between Route 234 and Route 29 in Gainesville. • Additional general purpose lane on I-66 between Route 29 in Gainesville and Route 15.
3-B Low Capital Cost Strategy	3-1 Screen 2 Enhanced Baseline	CLRP Baseline + transit service enhancements (bus, VRE, Metrorail)	<ul style="list-style-type: none"> • Baseline • Best performing elements of Screen 2 Super Bus Strategy • Increased frequency of VRE and Metrorail service • Increased VRE and Metrorail station parking.
3-C	3-3 Screen 2 Strategy #5	Metrorail extension from Vienna to Centreville and barrier separated reversible HOV.	<ul style="list-style-type: none"> • Baseline • Metrorail extension from Vienna to Centreville • Preservation of ROW for Metrorail from Centreville to Gainesville. • Two, barrier separated reversible HOV lanes in the median of I-66 from I-495 to Route 29 in Gainesville and extending in the median of Route 29 to Route 15. • I-66 between Route 50 and I-495 reconstructed with full shoulders and three general purpose lanes in each direction. • Between Route 50 and Route 29 in Gainesville, I-66 concurrent flow HOV lanes would be eliminated and I-66 would have three general purpose lanes in each direction.
3-D	3-4 Screen 2 Strategy #8 without improvements to Route 29/50	Metrorail extension from Vienna to Centreville with barrier separated, reversible HOV lanes on I-66 and an additional general purpose lane on I-66 between Route 50 and I-495.	<ul style="list-style-type: none"> • Baseline • Metrorail extension from Vienna to Centreville • Preservation of ROW for Metrorail from Centreville to Gainesville. • Two, barrier separated reversible HOV lanes in the median of I-66 from I-495 to Route 29 in Gainesville and extending in the median of Route 29 to Route 15. • Additional general purpose lane and full shoulders on I-66 between Route 50 and I-495. (Total of four general purpose lanes in each direction) • Convert concurrent flow HOV on I-66 between Route 50 and Route 29 in Gainesville to a general purpose lane. (Total of four general purpose lanes in each direction)
3-E	3-7	Barrier separated, reversible HOV lanes with best performing bus routes from the Super Bus strategy. This strategy does not include a Metrorail extension or the preservation of right-of-way for a Metrorail extension beyond Vienna.	<ul style="list-style-type: none"> • Baseline • Two, barrier separated reversible HOV lanes in the median of I-66 from I-495 to Route 29 in Gainesville and extending in the median of Route 29 to Route 15. • Best performing elements of Screen 2 Super Bus Strategy reconfigured to best utilize I-66 HOV lanes. • I-66 between Route 50 and I-495 reconstructed with full shoulders and three general purpose lanes in each direction. • Between Route 50 and Route 29 in Gainesville, I-66 concurrent flow HOV lanes would be eliminated and I-66 would have three general purpose lanes in each direction. • NO preservation of right-of-way for Metrorail extension beyond Vienna.
3-F	3-8 Screen 2 Strategy #1 without improvements to Route 29/50	Barrier separated, reversible HOV lanes on I-66 and an additional general purpose lane on I-66 between Route 50 and I-495.	<ul style="list-style-type: none"> • Baseline • Preservation of ROW for Metrorail from Vienna to Gainesville. • Two, barrier separated reversible HOV lanes in the median of I-66 from I-495 to Route 29 in Gainesville and extending in the median of Route 29 to Route 15. • Additional general purpose lane and full shoulders on I-66 between Route 50 and I-495. (Total of four general purpose lanes in each direction) • Convert concurrent flow HOV on I-66 between Route 50 and Route 29 in Gainesville to a general purpose lane. (Total of four general purpose lanes in each direction)

June 15, 1998

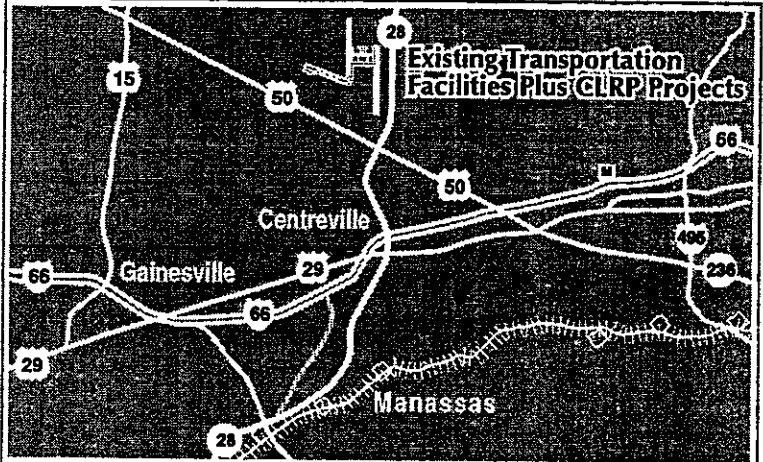
Screen 3 Strategies

Approved By Policy Advisory Committee on June 11, 1998

STRATEGY

3-A

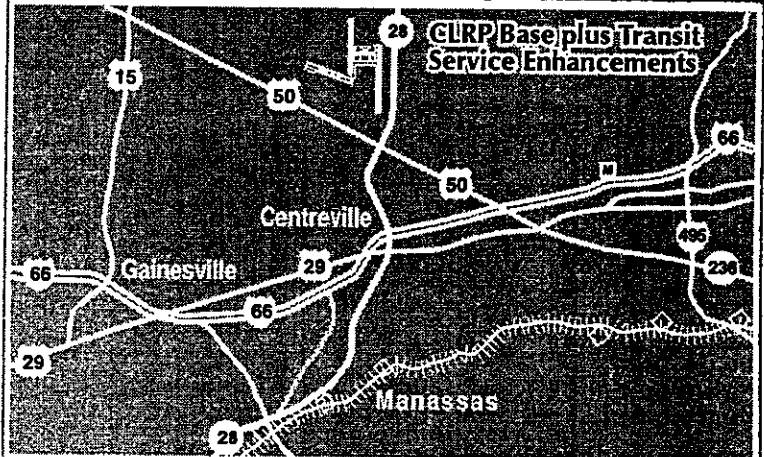
- **CLRP**
 - Includes an additional general purpose lane and concurrent flow HOV lane on I-66 between Route 234 and Route 29 in Gainesville.
 - Includes an additional general purpose lane on I-66 between Route 29 in Gainesville and Route 15.



STRATEGY

3-B

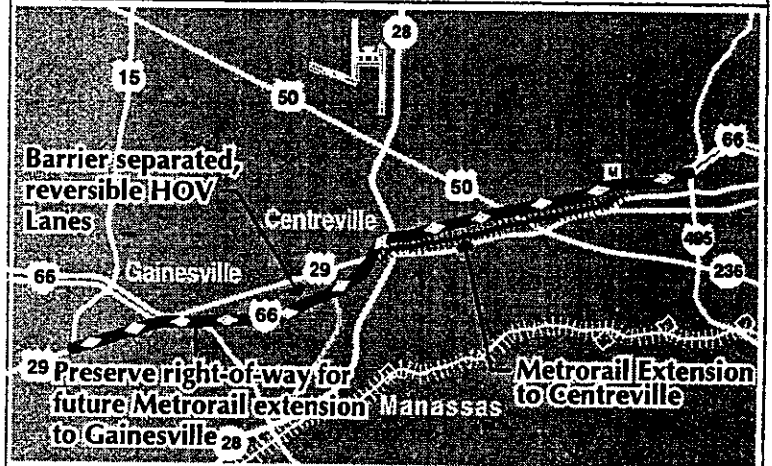
- **CLRP Base**
- **Transit Service Enhancements** (Bus, VRE, Metrorail)



STRATEGY

3-C

- **Extend Metrorail to Centreville**
- **Preserve right-of-way to Gainesville**
- **Barrier separated, reversible HOV lanes on I-66**



June 15, 1998

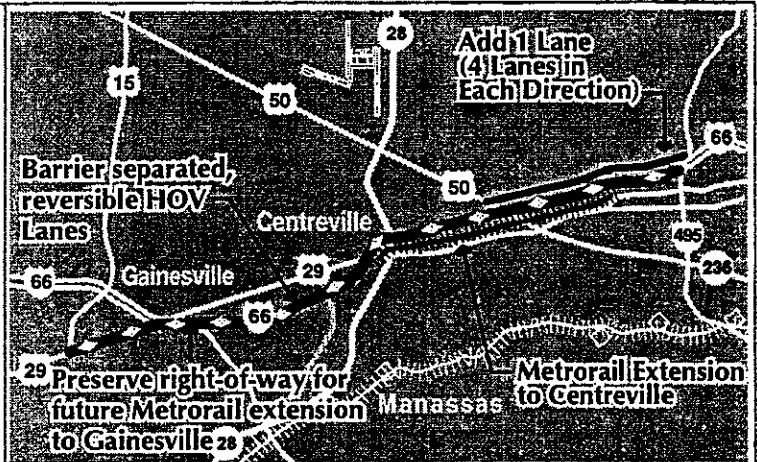
Screen 3 Strategies

Approved By Policy Advisory Committee on June 11, 1998

STRATEGY

3-D

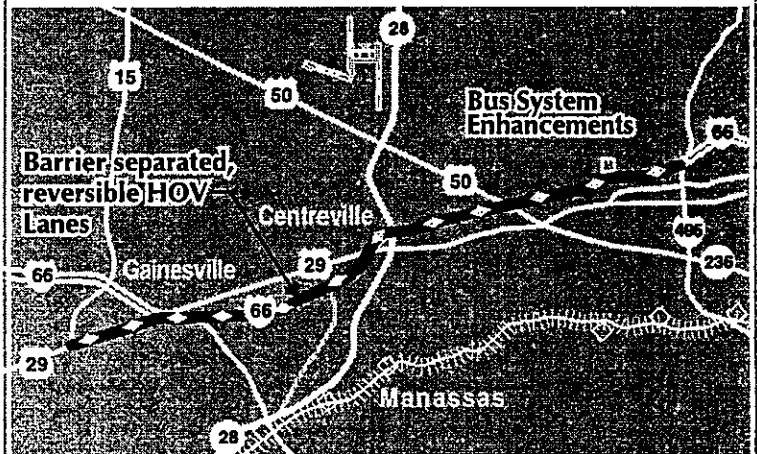
- Extend Metrorail to Centreville
- Preserve right-of-way to Gainesville
- Barrier separated, reversible HOV lanes on I-66
- Additional general purpose lane on I-66 between Route 50 and I-495



STRATEGY

3-E

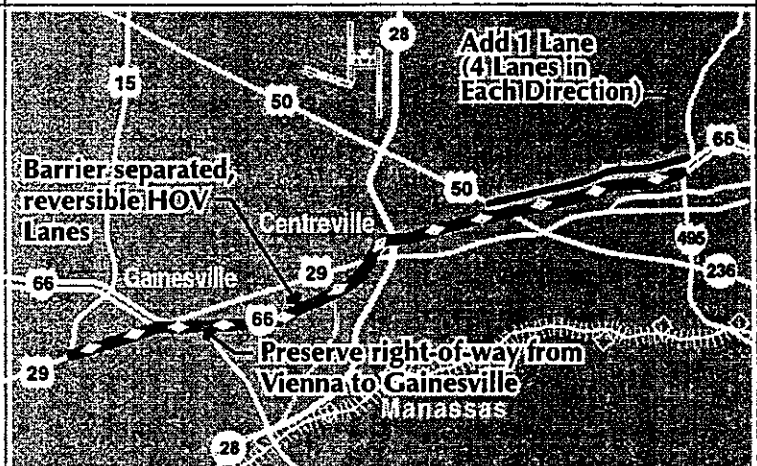
- Barrier separated, reversible HOV lanes on I-66
- Best performing bus routes from Super Bus strategy
- No Metrorail extension/ROW preservation



STRATEGY

3-F

- Barrier separated, reversible HOV lanes on I-66
- Additional general purpose lane on I-66 between Route 50 and I-495
- Metrorail ROW Preservation Vienna to Gainesville



This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some minor discoloration and faint smudges, characteristic of old paper. Two circular holes are visible along the left edge, suggesting it was part of a bound volume. The right edge is slightly irregular and shows some staining. There is no text or other markings on the page.

DATE: July 21, 1998

DRAFT

TO: I-66 Corridor MIS Project Management Team

FROM: Rick Nau

RE: Screen 3 Modeling Assumptions at the I-66 Gainesville and Beltway Interchanges

The purpose of this memo is to present recommended modeling assumptions for the I-66 Gainesville and Beltway interchanges. These modeling assumptions will be used for the Screen 3 portion of the I-66 Corridor MIS. The modeling assumptions have been developed based on discussion and coordination with the I-66 Technical Advisory Committee, Prince William County, Fairfax County, HNTB, VDOT and the I-66 Project Management Team.

I-66 AND THE CAPITAL BELTWAY

- Between I-66 and Route 7 the modeling will assume a total of 6 lanes in the northbound direction and five lanes in the southbound direction. The six lanes represent the four existing lanes, the additional peak hour HOV lane that is in the CLRP and an auxiliary lane to accommodate weaving movements between the interchanges.
- The modeling will assume the currently proposed CLRP mainline conditions (5 lanes in each direction) and existing interchange conditions between I-66 and US-50.
- The modeling will not assume general purpose ramps for the westbound to northbound and southbound to eastbound movements that are not currently provided in the existing interchange.
- The modeling will assume all HOV-to-HOV movements except the westbound to northbound and southbound to eastbound movements.
- The HOV to HOV connections described above will be assumed to exist with the I-66 strategies that include barrier separated reversible HOV lanes on I-66 and with the Baseline and Low Capital Cost strategies that maintain the existing concurrent flow HOV lanes on I-66.

I-66 AND ROUTE 29 AT GAINESVILLE

- Travel demand modeling of the I-66 Screen 3 strategies that include barrier separated HOV lanes will assume that the barrier separated HOV lanes extend to Route 29 at Gainesville transitioning west of Gainesville into concurrent flow HOV lanes (part of

the CLRP) to Haymarket. While Screen 2 modeling results indicated that HOV demand would not require two barrier separated HOV lanes past Route 234, this finding will be reevaluated in Screen 3 to determine the appropriate termini for the barrier separated HOV lanes.

- Direct HOV access to/from Route 29 south to/from I-66 east will be assumed. The modeling will assume direct HOV access ramps to/from the existing general purpose ramps in the interchange. While the configuration of HOV access at this interchange may ultimately be different, (i.e. direct ramps to/from the proposed East-West Connector), a different configuration would have negligible effect on travel demand forecasts.
- The modeling will not assume the continuation of HOV lanes on Route 29 southwest of the Gainesville interchange. While HOV lanes on Route 29 were identified as part of the original I-66 strategy concept, preliminary interchange design work indicates that provision of HOV lanes on Route 29 would have significant right-of-way impacts and, for this reason, should not be considered further.

I-66
CORRIDOR

Major
Investment
Study

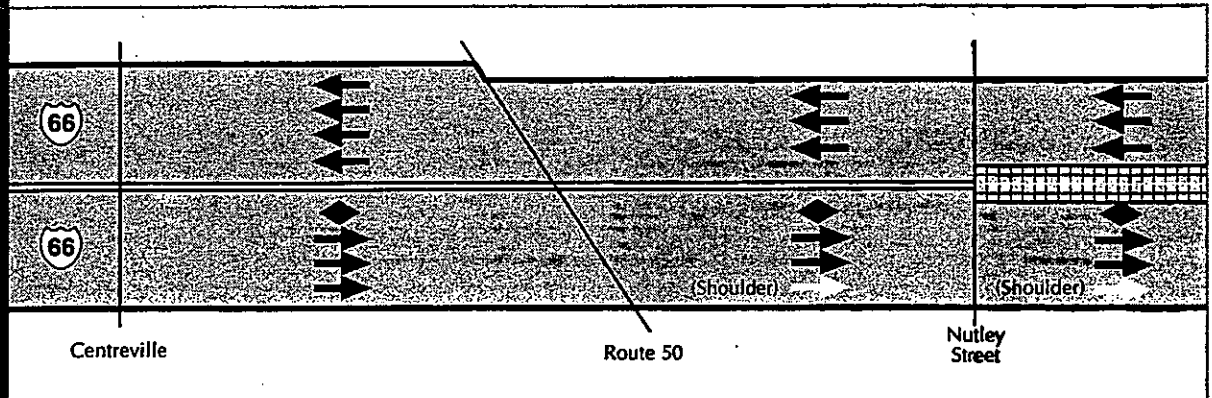


June 15, 1998

AM Peak Period Lane Configuration on I-66

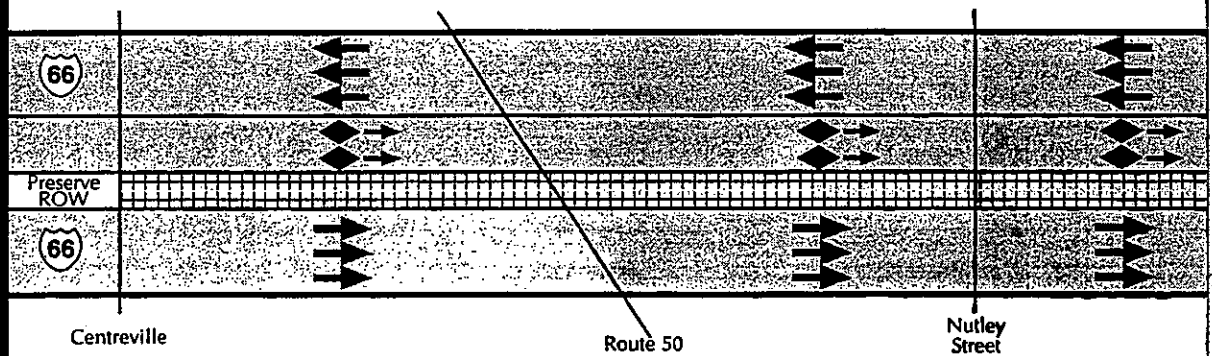
STRATEGY

3-A,
3-B



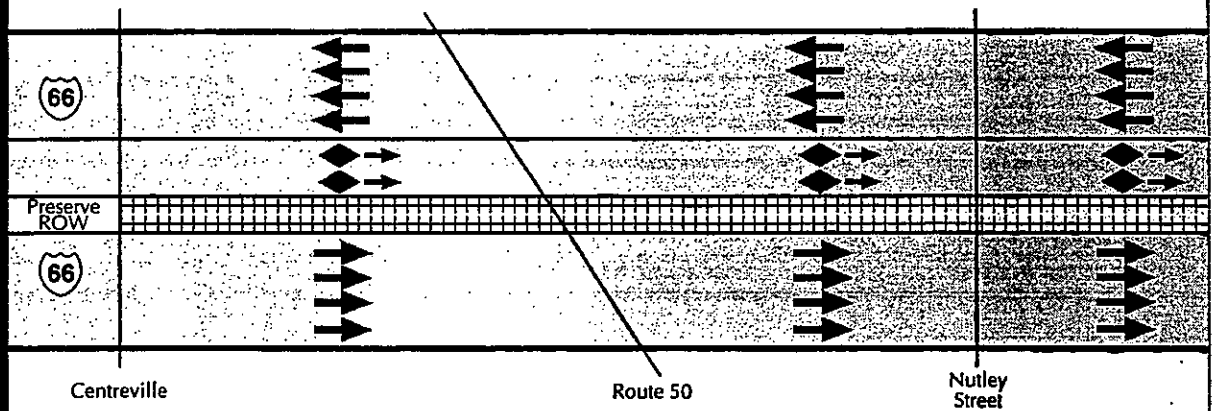
STRATEGY

3-C



STRATEGY

3-D



I-66
CORRIDOR

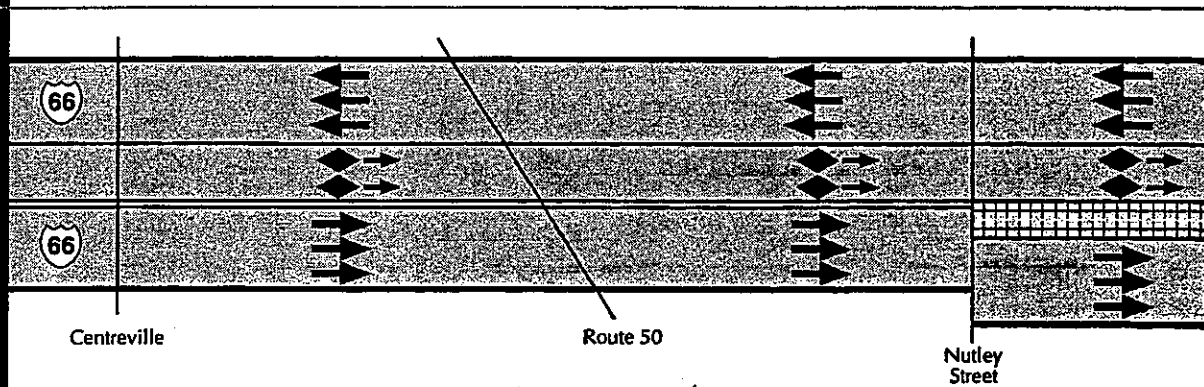
Major
Investment
Study



June 15, 1998

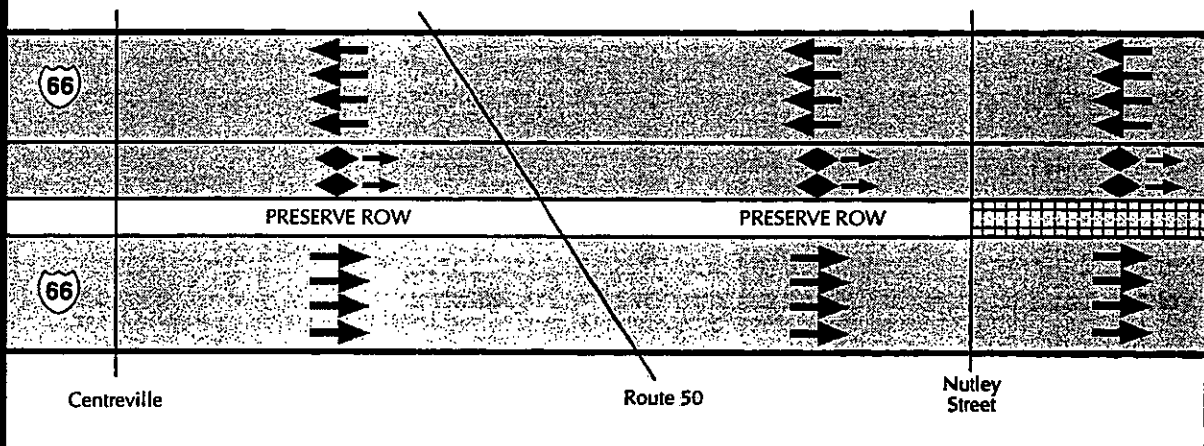
STRATEGY

3-E

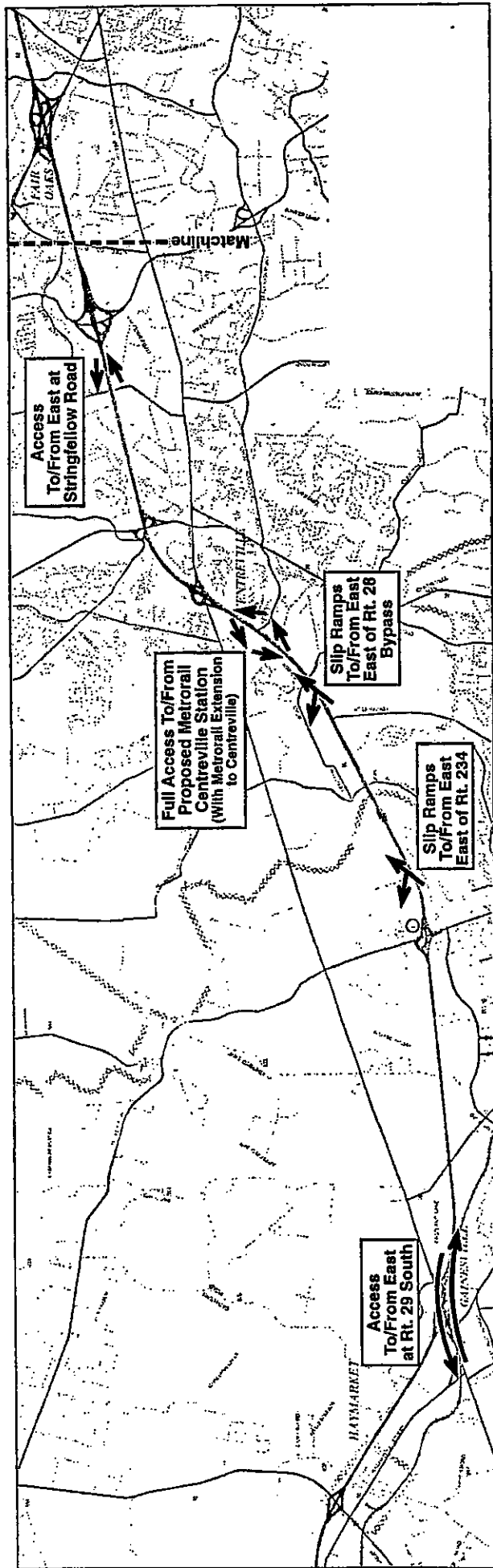


STRATEGY

3-F



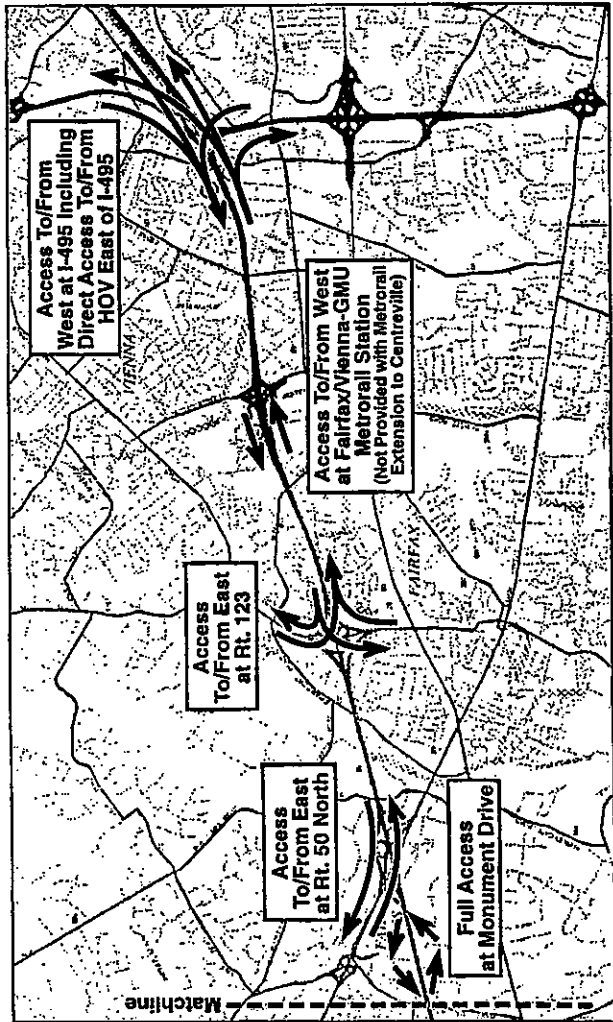
HOV Elements



Barrier Separated HOV Lane Ingress/Egress Ramp Locations For Screen 3 Analysis

0 6,000 12,000 Feet

N



DRAFT of 7/20/98

Data Sources:
 Prince William County Office of Mapping & Information Resources
 USGS National Hydrographic Survey
 USGS National Topographic Data Base
 USGS National Wetlands Inventory
 Virginia Department of Transportation, State Highway Map
 ADC Map Books

I-66 Major Investment Study

VMT **ORW**

Bus Elements

Screen 3**SUMMARY OF PEAK HOUR BUS REQUIREMENTS**

August 19, 1998

<i>Alternative Strategy</i>	<i>Peak Hour Buses</i>
Screen 2B	
Baseline (CLRP)	55
Enhanced Baseline	87
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	77
#12 - Super Bus	137
Screen 3	
3-A Baseline (CLRP)	51
3-B Low Capital Cost Strategy (Basis for all other Screen 3 bus networks)	147
3-C/3-D Metrorail Extension with Feeder Buses (Same bus network for Strategy 3-D)	138
3-E/3-F Barrier Separated HOV without Metrorail (Same bus network for Strategy 3-F)	137

Source: BRW, Inc. / KPMG

h:\projects\l-66mis\scrn3a\bus\pkbusum2.xls

Metrorail

SUMMARY OF ESTIMATED CONSTRUCTION COSTS

PROPOSED METRORAIL EXTENSION

VIENNA TO CENTREVILLE

All values shown are exclusive of vehicles and ROW costs

- Screen 2B Estimate by BRW, Inc. \$302,782,000
Estimate based on use of Dulles Transit Study Unit Costs
- April 1998 Estimate by WMATA \$494,770,000
- July 1998 Estimate by WMATA \$519,000,000
- Screen 3 Estimate by BRW, Inc. (range) \$461,884,000 to \$513,309,000

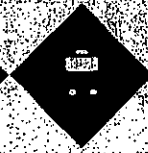
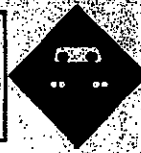
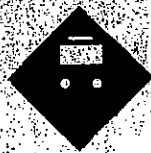
Estimate based on the use of refined and updated unit costs, more detailed definition of project (station area parking requirements, etc.) and inputs from WMATA on actual construction experience with similar type freeway median area extensions.

BRW cost estimate range illustrates variability in potential cost of freeway median area preparation.

Note: Current Screen 3 cost estimate likely to be revised as station area concept plans are further refined.

Source: BRW, Inc.
August 18, 1998

h:\projects\i-66mis\mngts\metro0825.wpd



Screen 2B Results and Recommendations for Screen 3

June 10, 1998



Disposition of Screen 2B Strategies and Recommendations for Screen 3

STRATEGY	CARRY FORWARD AS UNIQUE STRATEGY?	BASIS FOR RECOMMENDATION	ISSUES TO BE ADDRESSED IN SCREEN 3 STRATEGIES
Baseline (CLRP)		Basis for comparison	None
Enhanced Baseline	Yes	Provides FTA required low capital cost strategy	Select best performing bus routes from Screen 2 Enhanced Base and Super Bus, and rail service enhancements
#1 - General Purpose Lanes + HOV Reversible Lanes	Yes	Good performer; non-Metrorail strategy	Select HOV - barrier separated or concurrent flow? Rt. 29/Rt. 50 improvements in or out?
#5 - HOV Reversible Lanes + Metrorail to Centreville	Yes	Good performer; minimize ROW with no general purpose lane additions	Select HOV - barrier separated or concurrent flow?
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	Yes	Best performer of all Screen 2 strategies	Select HOV - barrier separated or concurrent flow? Rt. 29/Rt. 50 improvements in or out?

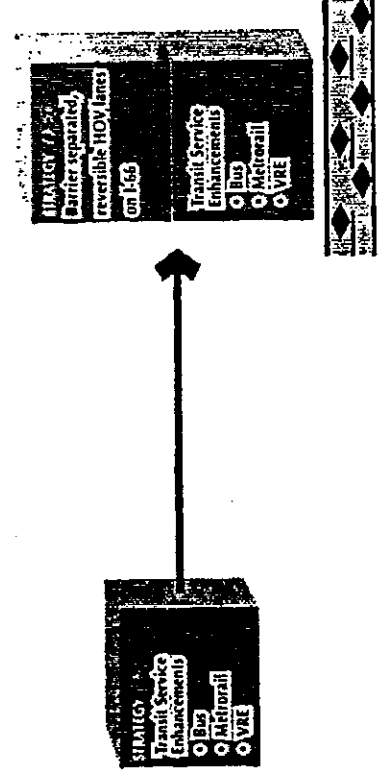
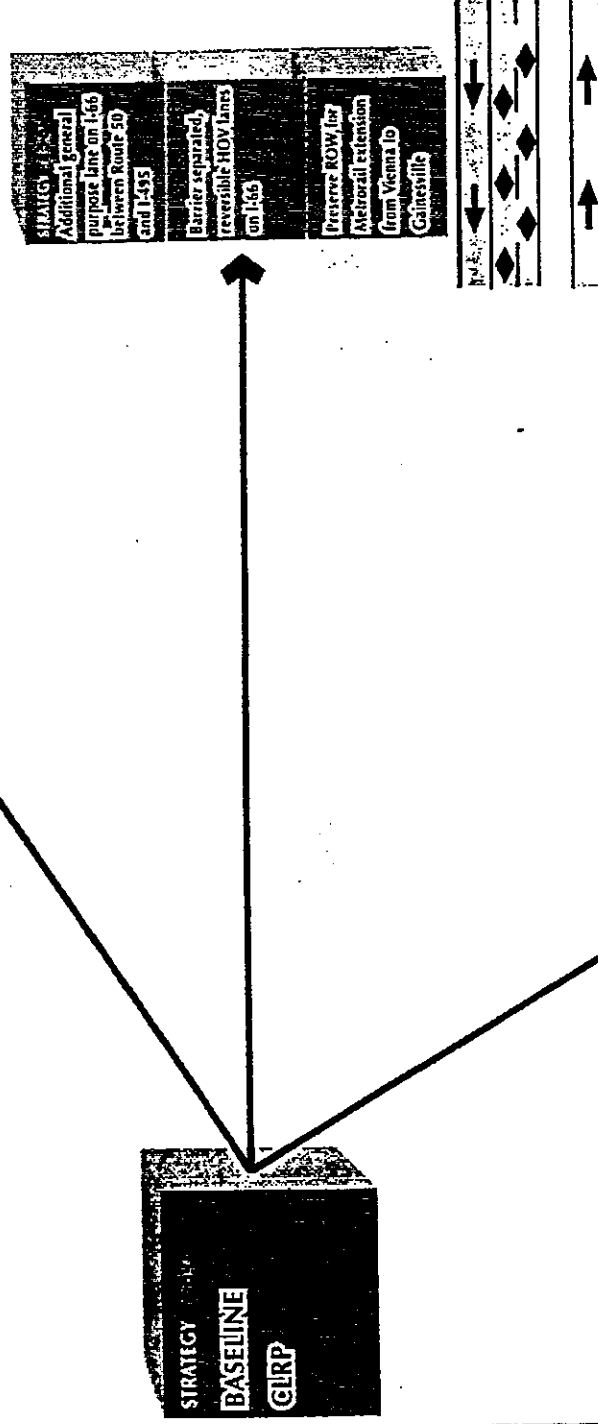
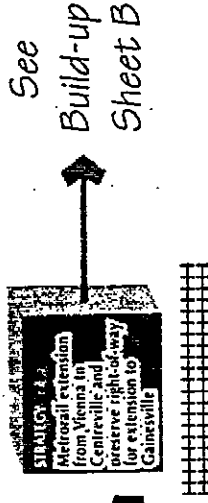
Disposition of Screen 2B Strategies and Recommendations for Screen 3

STRATEGY	EARLY FORWARD STRATEGY	BASIS FOR RECOMMENDATION	ISSUES TO BE ADDRESSED IN SCREEN 3 STRATEGIES
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	No	North-South LRT does not significantly serve East-West travel demand. LRT component should be further studied as part of Rt. 28 Corridor Study.	NA
#11 - I-66 Express/ Local	No	Severe ROW impacts and high capital cost relative to increase in person throughput	NA
#12 - Super Bus	No	Diminishing ridership response to service improvements indicate that not all routes warrant further study. Does not improve I-66 performance as a stand-alone strategy.	Evaluate and select best performing bus routes. Access with HOV facilities to evaluate bus travel time and ridership
#13 - Highway Plan	No	Does not improve I-66 performance east of Route 50. Elements of the Highway Plan are most appropriately studied and implemented as part of the local and regional transportation planning process and not as part of the I-66 Corridor MIS.	NA
#15 - Virginia Railway Express	No	Ridership forecast does not warrant further study	NA

Build-Up Approach to Screen 3 Strategies - Sheet A

Screen 3 Issues

1. Assess impact of preserving ROW for Metrorail Extension
2. Assess Barrier - Separated vs. Concurrent flow HOV (#3-4 vs. 3-6)
3. Assess Rt. 29/50 improvements (#3-4 vs. 3-5)



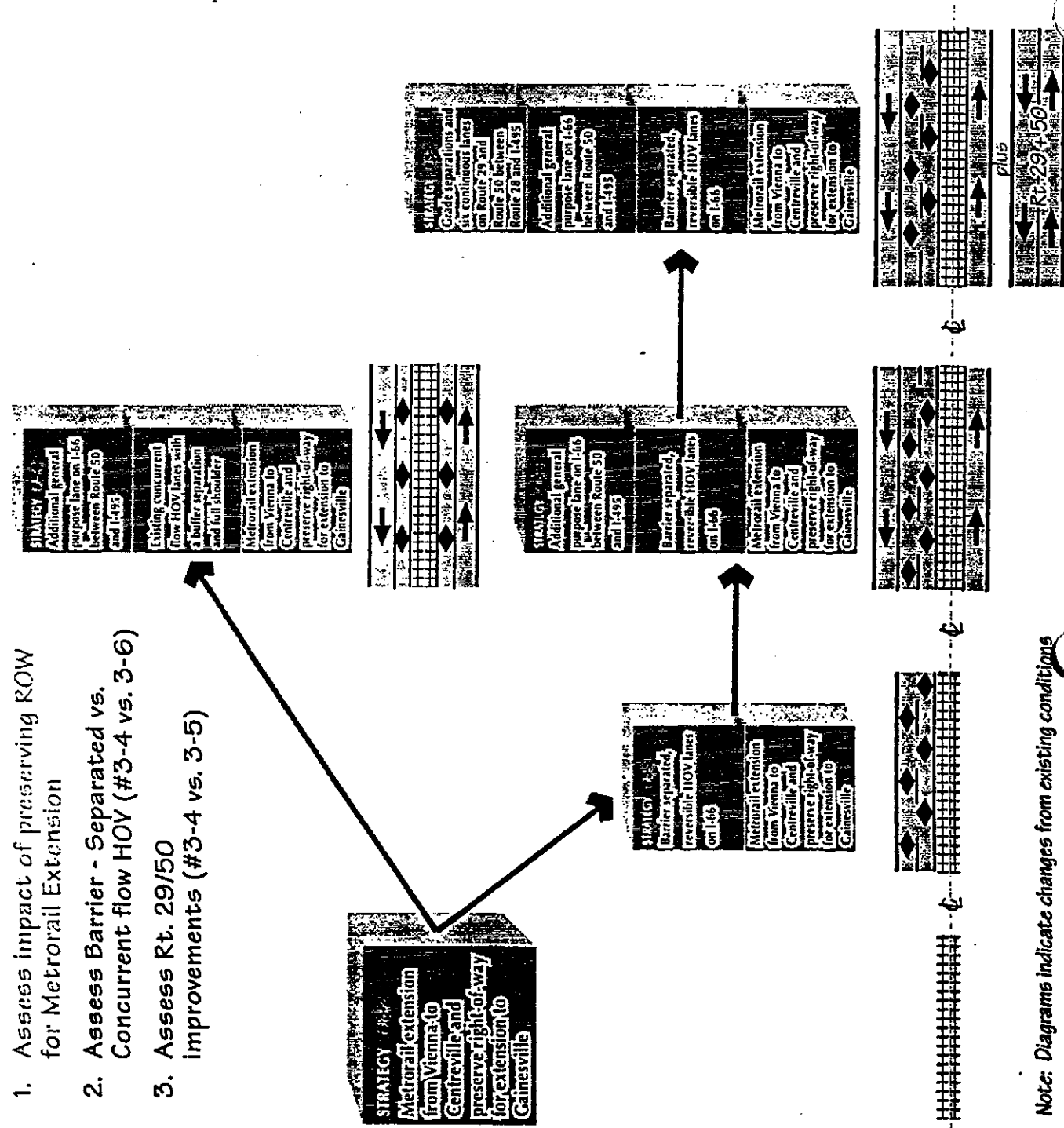
Note: Diagrams indicate changes from existing conditions

Build-Up Approach to Screen 3 Strategies - Sheet B

Screen 3 Issues

1. Assess impact of preserving ROW for Metrorail Extension
2. Assess Barrier - Separated vs. Concurrent flow HOV (#3-4 vs. 3-6)
3. Assess Rt. 29/50 improvements (#3-4 vs. 3-5)

from
 Build-up
 Sheet A



Note: Diagrams indicate changes from existing conditions

Recommended Screen 3 Strategies

I-66 Major
Investment
Study



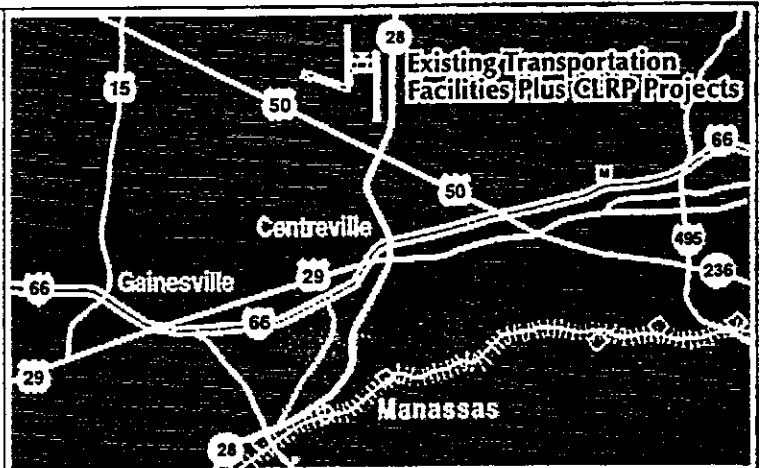
June 10, 1998

STRATEGY

3-0

Screen 2 Baseline

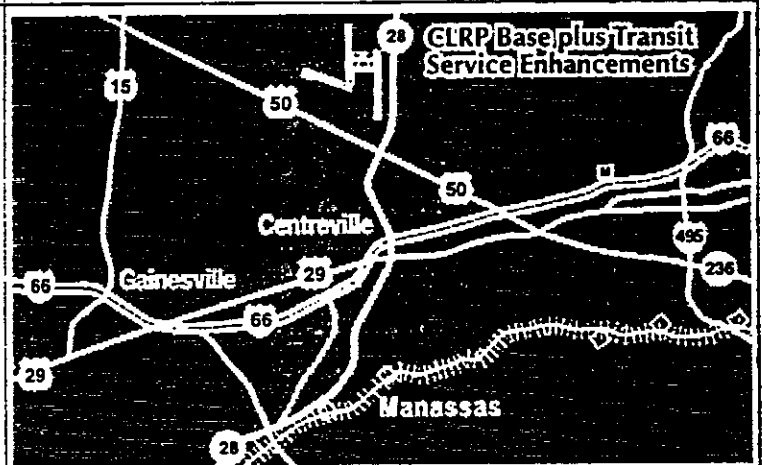
- CLRP



STRATEGY

3-1

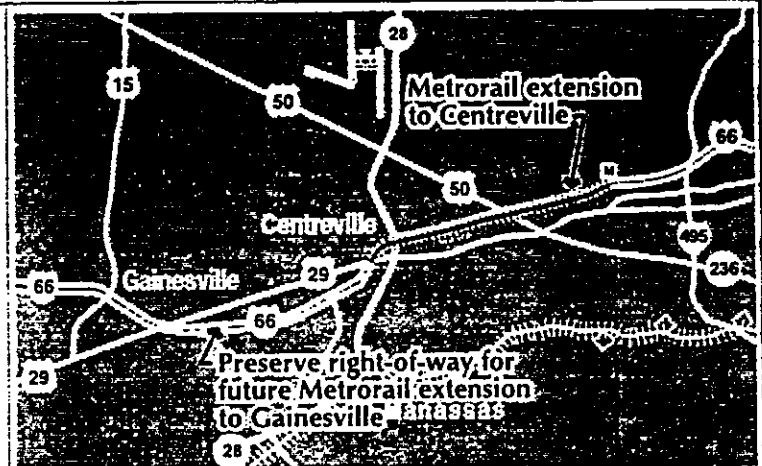
- CLRP Base
- Transit Service Enhancements (Bus, VRE, Metrorail)



STRATEGY

3-2

- Extend Metrorail to Centreville
- Preserve right-of-way to Gainesville



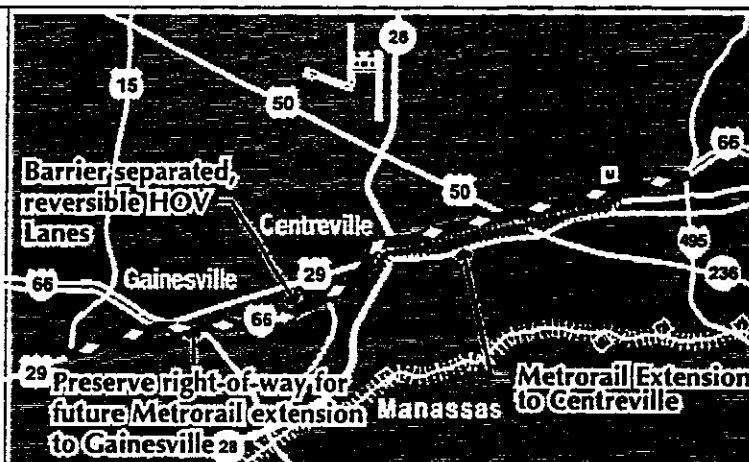
Recommended Screen 3 Strategies

STRATEGY

3-3

Screen 2
Strategy #5

- Extend Metrorail to Centreville
- Preserve right-of-way to Gainesville
- Barrier separated, reversible HOV lanes on I-66

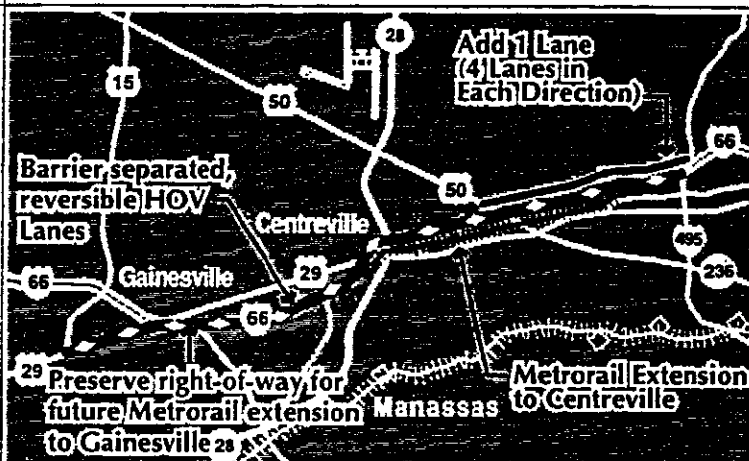


STRATEGY

3-4

Screen 2 Strategy
#8 without
Rt. 29/50
improvements

- Extend Metrorail to Centreville
- Preserve right-of-way to Gainesville
- Barrier separated, reversible HOV lanes on I-66
- Additional general purpose lane on I-66 between Route 50 and I-495

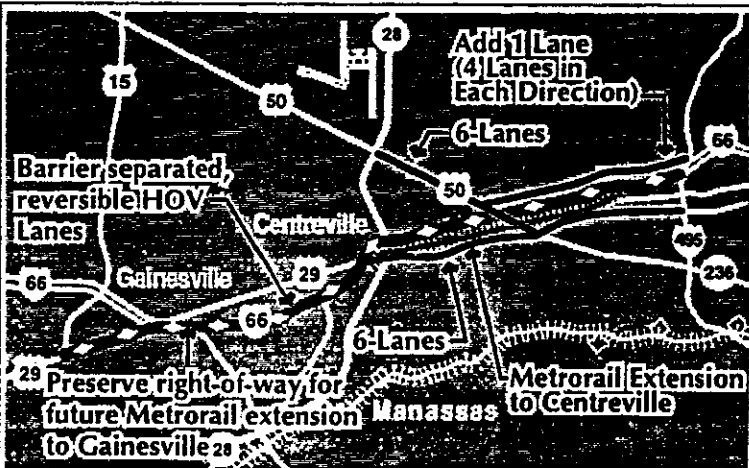


STRATEGY

3-5

Screen 2
Strategy #8

- Extend Metrorail to Centreville
- Preserve right-of-way to Gainesville
- Barrier separated, reversible HOV lanes on I-66
- Additional general purpose lane on I-66 between Route 50 and I-495
- Grade Separations
- Six continuous lanes on Rts. 29 and 50 between Rt. 28 and I-495



Recommended Screen 3 Strategies

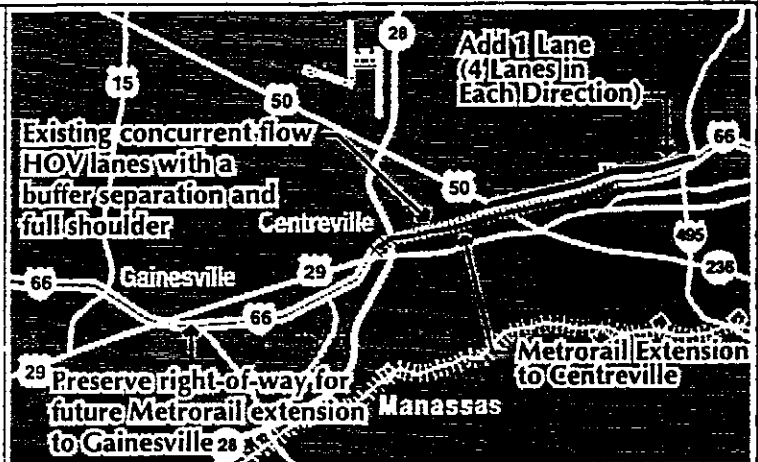
I-66 Major Investment Study
COG #1998

June 10, 1998

STRATEGY

3-6

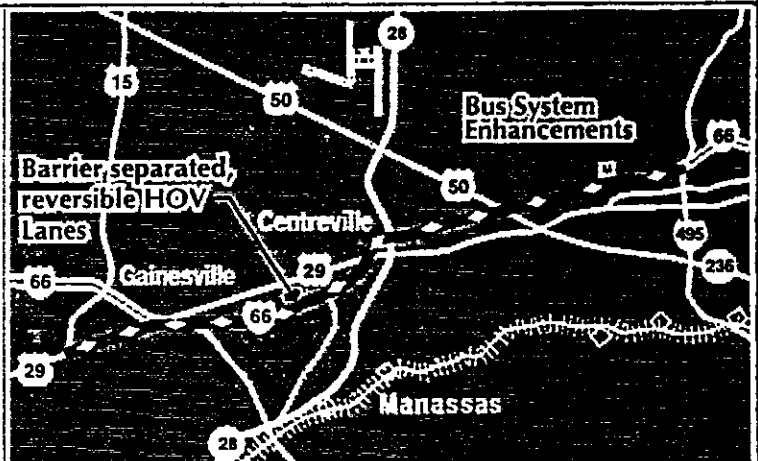
- Extend Metrorail to Centreville
- Preserve right-of-way to Gainesville
- Existing concurrent flow HOV lanes with a buffer separation and full shoulder
- Additional general purpose lane on I-66 between Route 50 and I-495



STRATEGY

3-7

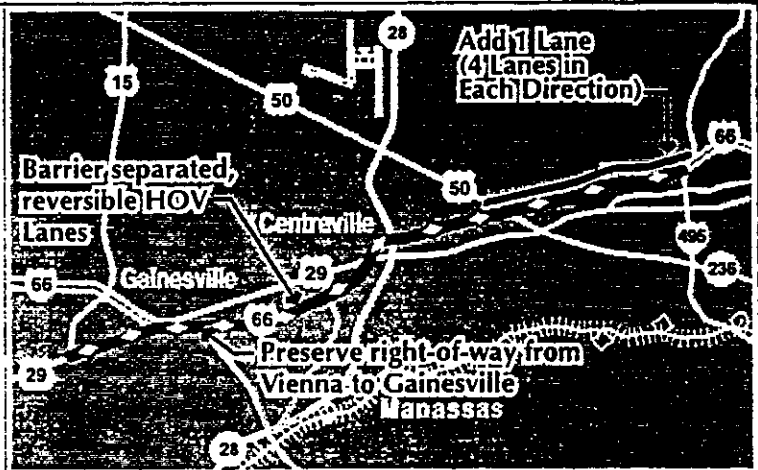
- Barrier separated, reversible HOV lanes on I-66
- Best performing bus routes from Super Bus strategy
- No Metrorail extension/ROW preservation



STRATEGY

3-8

- Barrier separated, reversible HOV lanes on I-66
- Additional general purpose lane on I-66 between Route 50 and I-495
- Metrorail ROW Preservation Vienna to Gainesville

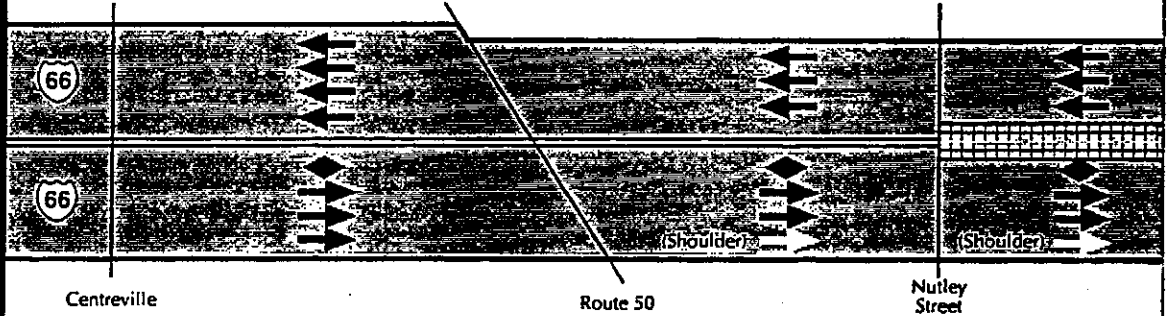


Screen 2 Strategy #1 without Rt. 29/50 improvements

AM Peak Period Lane Configuration on I-66

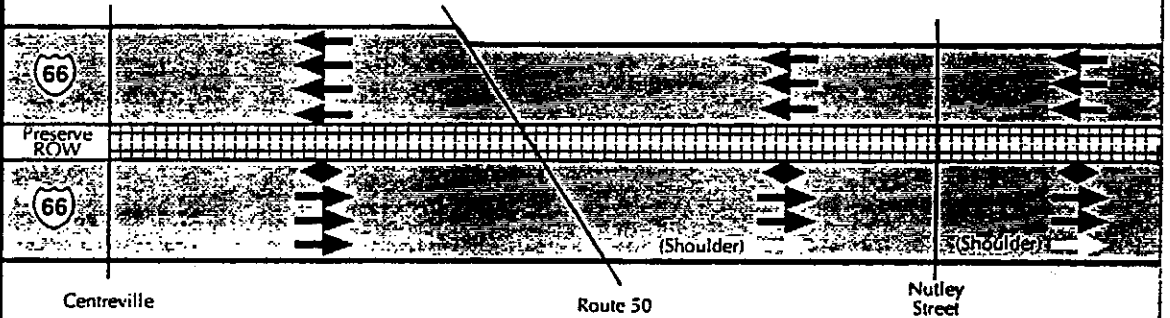
STRATEGY

**# 3-0,
3-1**



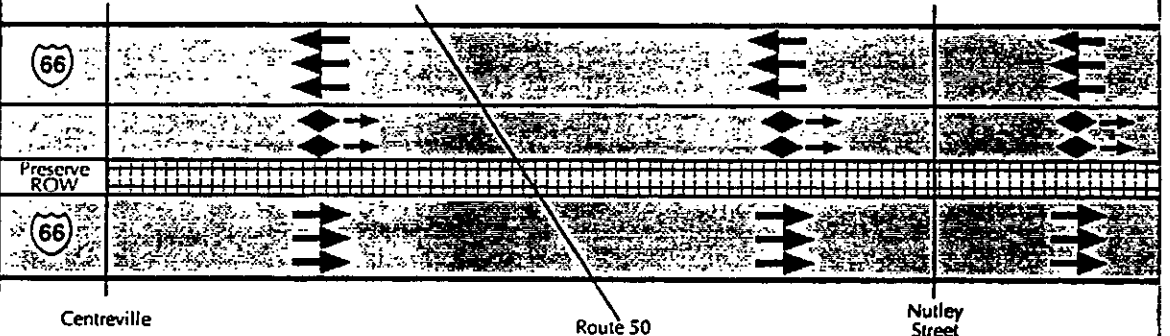
STRATEGY

3-2



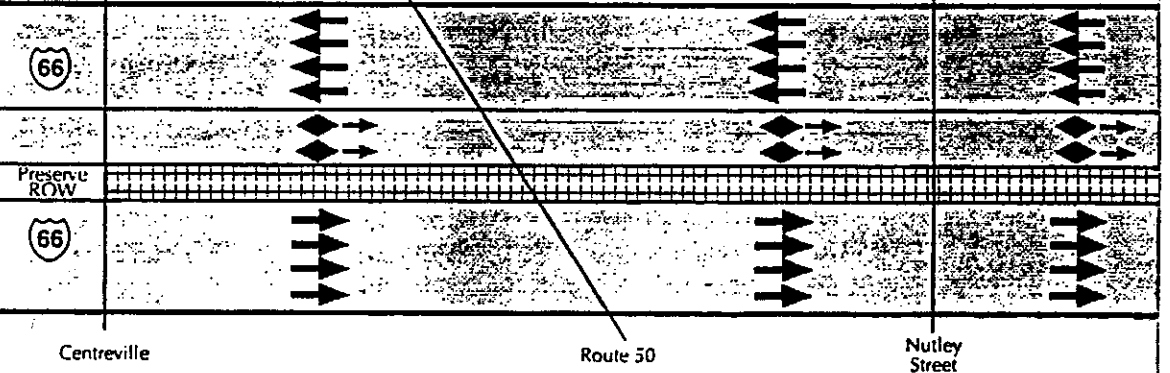
STRATEGY

3-3



STRATEGY

**# 3-4,
3-5**



I-66
CORRIDOR

Major
Investment
Study

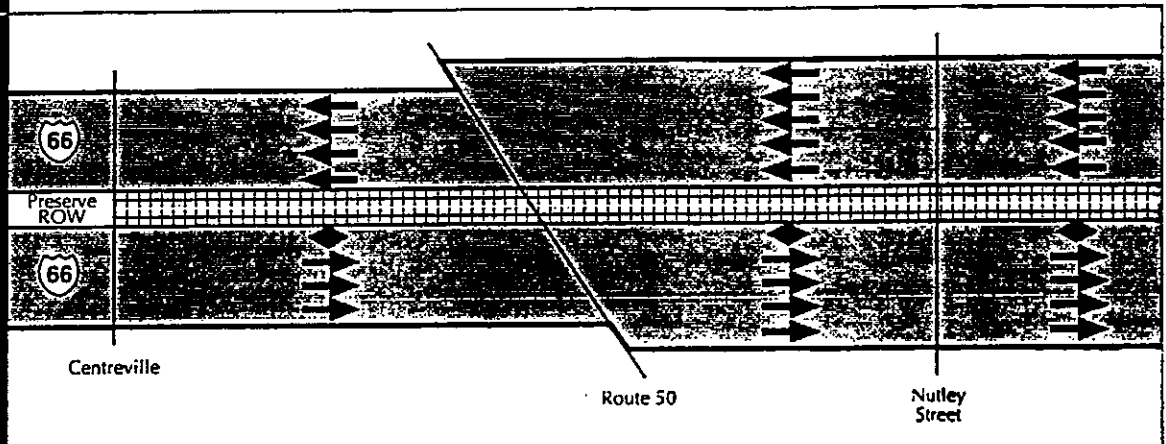


June 10, 1998

AM Peak Period Lane Configuration on I-66

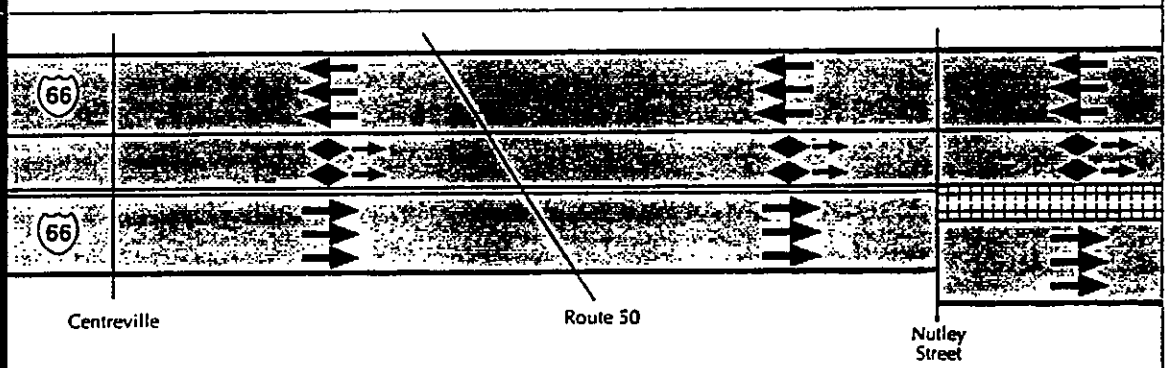
STRATEGY

3-6



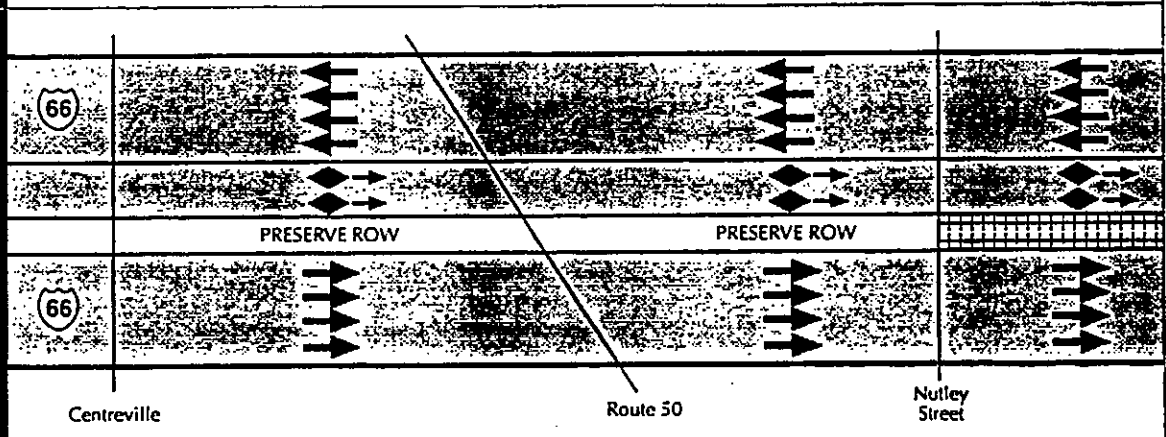
STRATEGY

3-7



STRATEGY

3-8



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3. TABLE B-1 RIDERSHIP/VEHICULAR FORECASTS
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TABLE 1.
SUMMARY COMPARISON OF STRATEGIES
SCREEN 2B ANALYSIS

STRATEGY	MEASURES OF EFFECTIVENESS							
	MOST SIGNIFICANT ENVIRONMENTAL IMPACTS (See Table A)	RIDERSHIP / VEHICULAR FORECASTS (See Tables B-1 and B-2)	THROUGHPUT (See Table C)	ANNUALIZED CAPITAL COST (Millions of \$) (See Tables D-1 and D-2)	ANNUAL NET OPERATING COST (Millions of \$) (See Table E)	TOTAL ESTIMATED ROW COST (Millions of \$) (See Table F-1)	TOTAL ANNUAL HIGHWAY COST / INCREMENTAL ANNUAL STUDY AREA VEHICLE TRIPS (See Table G)	TOTAL TRANSIT ANNUAL INCREMENTAL COST / INCREMENTAL ANNUAL TRANSIT RIDER (See Table G)
Baseline				\$0.0	\$0.00	\$0	NA	NA
Enhanced Baseline				\$1.4	\$1.22	\$0.0	\$0.00	\$0.79
#1 - General Purpose Lanes + HOV Reversible Lanes		Reduces delay on I-66 and arterials Significant increase in HOV's	Reduces V/C on I-66 east and west of RL 50 Reduces V/C on north-south arterials	\$83.5	\$1.09	\$205.6	\$3.12	\$0.35
#5 - HOV Reversible Lanes + Metrolink to Centreville		Reduces delay on arterials Significant increase in HOV's		\$76.4	\$5.13	\$55.1	\$8.88	\$7.07
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrolink to Centreville		Reduces delay on I-66 and arterials Significant increase in HOV's	Reduces V/C on I-66 east and west of RL 50 Reduces V/C on north-south arterials 6% increase in person throughput	\$120.4	\$5.29	\$243.1	\$3.44	\$7.19
#9 - General Purpose Lanes + 1 Light Rail Line + Metrolink to Centreville		Reduces delay on I-66 Significant increase in total transit riders	Reduces V/C on I-66 west of RL 50 7% increase in person throughput	\$155.2	\$12.75	\$303.1	\$2.80	\$11.76
#11 - I-66 Express / Local*	40 acres of parkland	Reduces delay on and arterials	7% increase in person throughput	\$62.1	\$3.31	\$106.0	\$1.64	\$0.87
#12 - Super Bus		Significant increase in total transit riders		\$4.7	\$5.49	\$4.6	\$0.18	\$1.79
#13 - Highway Plan	19 acres of wetland 19 historic sites 64 acres of parkland	Reduces delay on I-66 and arterials	Reduces V/C on north-south arterials	\$64.7	\$6.14	\$331.6	\$4.91	\$0.64
#15 - Virginia Railway Express				\$6.0	\$1.78	\$1.4	\$0.00	\$2.25

* Strategy #11 includes additional lanes on the Capital Beltway.

**TABLE A
ENVIRONMENTAL
SCREEN 2B ANALYSIS**

STRATEGY	STREAM CROSSINGS/ WETLANDS		HISTORIC PROPERTIES		PARKLANDS	AIR QUALITY		HIGHEST IMPACT
	Number of streams crossed	Acres of wetlands potentially impacted	Number of historic properties potentially impacted	Acres of Historic Districts potentially impacted		Incremental Change In Study Area Emissions Relative to Baseline (2020 Tons per Day)		
						Nitrogen Oxides (NOx)	Carbon Monoxide (CO)	
Baseline	0	0	0	0	0	NA	NA	
Enhanced Baseline	0	0	0	0	0	0	1	
#1 - General Purpose Lanes + HOV Reversible Lanes	3	2	1	0	19	1	-4	
#5 - HOV Reversible Lanes + Metrorail to Centreville	2	1	1	0	12	0	-2	
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	3	2	1	0	19	1	-5	
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	15	4	1	2	21	1	-3	
#11 - I-66 Express / Local	5	4	1	0	40	2	1	40 acres of parkland
#12 - Super Bus	0	0	0	0	0	0	3	
#13 - Highway Plan	51	19	19	10	64	1	-4	19 acres of wetland 19 historic sites 64 acres of parkland
#15 - Virginia Railway Express	0	0	0	0	0	0	1	

Source: BRW, Inc.

**TABLE B-1
RIDERSHIP / VEHICULAR FORECASTS
SCREEN 2B ANALYSIS**

STRATEGY	TOTAL VEHICLE TRIPS IN STUDY AREA	I-66 DAILY DELAY IN VEHICLE HOURS	ARTERIAL DAILY DELAY IN VEHICLE HOURS	I-66 DAILY HOV VEHICLES ¹	TOTAL TRANSIT TRIPS ³ (Linked)	BEST PERFORMERS
Baseline/CLRP	18,833,000	23,300	110,000	9,000	48,700	
Enhanced Baseline	18,796,000	23,200	107,200	8,700	59,600	
#1 - General Purpose Lanes + HOV Reversible Lanes	19,710,000	19,400	99,500	12,700	59,800	Reduces delay on I-66 and arterials 41% increase in HOV's
#5 - HOV Reversible Lanes + Metrorail to Centreville	18,977,000	26,300	100,700	13,700	68,000	Reduces delay on arterials 52% increase in HOV's 40% increase in total transit riders
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	19,628,000	18,600	99,000	12,400	67,600	Reduces delay on I-66 and arterials 38% increase in HOV's 39% increase in total transit riders
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	19,667,000	21,700	102,500	8,900	75,100	Reduces delay on I-66 54% increase in total transit riders
#11 - I-66 Express / Local	20,081,000	32,200	96,900	8,700 ²	59,400	Reduces delay on arterials
#12 - Super Bus	19,036,000	26,500	110,500	8,400	65,000	33% increase in total transit riders
#13 - Highway Plan	19,292,000	18,800	96,100	9,000	59,800	Reduces delay on I-66 and arterials
#15 - Virginia Railway Express	18,835,000	24,100	110,000	8,800	60,000	

NOTES: ¹HOV Vehicles on I-66

²HOV vehicles operating in mixed flow

³Total Transit Trips = Total Bus-Only Trips + Total Metrorail/LRT Trips + Total Commuter Rail Trips (See Table 1D-2)

Source: BRW/KPMG Peat Marwick

TABLE B-2
TRANSIT RIDERSHIP FORECASTS
SCREEN 2B ANALYSIS

STRATEGY	METRO RAIL DAILY TRIPS			LIGHT RAIL TRANSIT DAILY TRIPS			BUS SYSTEM DAILY TRIPS				VRE DAILY TRIPS (J)	TOTAL TRANSIT TRIPS (Linked) (Sum of A+D+G+J)
	TOTAL TRIPS (A)	BOARDINGS ON NEW STATIONS (B)	INCREMENTAL TRIPS (C)	LRT ONLY (D)	LRT TRANSFERS (E)	TOTAL LRT (F)	BUS ONLY (G)	BUS TRANSFERS TO OTHER MODES (H)	TOTAL (I)			
Baseline/CLRP	21,900	NA	NA	NA	NA	NA	24,600	8,100	32,700	2,200	48,700	
Enhanced Baseline	23,100	NA	1,200	NA	NA	NA	34,300	9,400	43,700	2,200	59,600	
#1 - General Purpose Lanes + HOV Reversible Lanes	24,000	NA	2,100	NA	NA	NA	33,700	9,600	43,300	2,100	59,800	
#5 - HOV Reversible Lanes + Metrorail to Centreville	41,100	18,400	19,200	NA	NA	NA	25,100	7,800	32,900	1,800	68,000	
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	40,800	18,200	18,900	NA	NA	NA	25,000	7,800	32,800	1,800	67,600	
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	44,400	22,300	22,500	7,400	6,900	14,300	21,700	7,700	29,400	1,600	75,100	
#11 - I-66 Express / Local	23,600	NA	1,700	NA	NA	NA	33,600	9,100	42,700	2,200	59,400	
#12 - Super Bus	24,100	NA	2,200	NA	NA	NA	38,500	10,500	49,000	2,400	65,000	
#13 - Highway Plan	23,100	NA	1,200	NA	NA	NA	34,400	9,300	43,700	2,300	59,800	
#15 - Virginia Railway Express	23,100	NA	1,200	NA	NA	NA	34,300	9,300	43,600	2,600	60,000	

Source: BRW/KPMG Peat Marwick

**TABLE C
THROUGHPUT
SCREEN 2B ANALYSIS**

STRATEGY	VOLUME / CAPACITY ON I-66		VOLUME / CAPACITY ON NORTH/ SOUTH ARTERIALS NORTH OF I-66	TOTAL THROUGHPUT OF PEOPLE AT I-495 IN AM PEAK PERIOD INBOUND	BEST PERFORMERS
	West of I-495	West of Rt. 50			
Baseline	1.12	1.23	1.07	176,436	
Enhanced Baseline	1.11	1.24	1.06	178,624	
#1 - General Purpose Lanes + HOV Reversible Lanes	1.00	1.12	1.02	185,231	Reduces V/C on I-66 east and west of Rt. 50 Reduces V/C on north-south arterials
#5 - HOV Reversible Lanes + Metrorail to Centreville	1.06	1.22	1.04	183,572	
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	0.99	1.11	1.03	186,835	Reduces V/C on I-66 east and west of Rt. 50 Reduces V/C on north-south arterials 6% Increase in person throughput
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	1.12	1.15	1.05	189,356	Reduces V/C on I-66 west of Rt. 50 7% Increase in person throughput
#11 - I-66 Express / Local	1.17	1.23	1.03	189,316	7% Increase in person throughput
#12 - Super Bus	1.12	1.23	1.04	180,862	
#13 - Highway Plan	1.16	1.24	0.93	181,230	Reduces V/C on north-south arterials
#15 - Virginia Railway Express	1.12	1.25	1.06	178,334	

TABLE D-1
TOTAL CAPITAL COST (MILLIONS OF \$)
SCREEN 2B ANALYSIS

STRATEGY	I-66 SOV*	I-66 HOV*	ARTERIAL ROADWAYS	METRORAIL	LIGHT RAIL TRANSIT	BUS SERVICE	VRE	Construction Cost ROW Cost Total Cost
Baseline	0	0	0	0	0	0	0	0
Enhanced Baseline	0	0	0	0	0	11.3	0	\$11.3
#1 - General Purpose Lanes + HOV Reversible Lanes	360.0	22.3	341.2	0.0	0	7.9	0	\$849.1
#5 - HOV Reversible Lanes + Metrorail to Centreville	310.0	7.7	317.7	422.8	6.1	8.5	0	\$890.5
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	360.0	22.3	341.2	422.8	43.6	7.9	0	\$1,271.9
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	305.0	13.1	341.2	422.8	513.6	7.6	0	\$1,650.1
#11 - I-66 Express / Local	480.0	78.8	558.8	0.0	0	9.5	0	\$669.5
#12 - Super Bus	0	0	0	14.3	14.3	28.7	0	\$37.9
#13 - Highway Plan	0	0	564.4	0	0	10.1	0	\$574.4
#15 - Virginia Railway Express	0	0	253.1	0	0	11.3	55.7	\$67.1
			817.4	0	0	11.3	1.4	\$1.4
							57.1	\$68.5

*I-495/I-66 Interchange not included

KEY:

Construction Cost	
ROW Cost	
Total Cost	

Source: BRW/Dewberry & Davis

TABLE D-2
ANNUALIZED CAPITAL COSTS (MILLIONS OF \$)
SCREEN 2B ANALYSIS

STRATEGY	I-66 SOV	I-66 HOV	ARTERIAL ROADWAYS	METRO RAIL	LIGHT RAIL TRANSIT	BUS SERVICE	VRE	Construction Cost ROW Cost	Total Cost
Baseline	0	0	0	0	0	0	0	0	0
Enhanced Baseline	0	0	0	0	0	1.4	0	\$1.4	\$0.0
#1 - General Purpose Lanes + HOV Reversible Lanes	29.2 1.6 30.7	11.3 0.5 11.8	27.6 11.9 39.6	0.0 0.4 0.4	0	1.0	0	\$69.1	\$14.4
#5 - HOV Reversible Lanes + Metrolink to Centerville	25.1 0.5 25.6	11.3 0.2 11.5	0.7 0.3 1.1	34.2 2.8 37.0	0	1.1	0	\$72.5	\$3.9
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrolink to Centerville	29.2 1.6 30.7	11.3 0.5 11.8	27.6 11.9 39.6	34.2 3.1 37.3	0	1.0	0	\$103.4	\$17.0
#9 - General Purpose Lanes + 1 Light Rail Line + Metrolink to Centerville	24.7 0.9 25.6	4.9 0.2 5.1	27.6 11.9 39.6	34.2 2.9 37.1	41.6 5.3 46.8	1.0	0	\$134.0	\$21.2
#11 - I-66 Express / Local	38.9 5.5 44.4	14.6 0.9 15.5	0	0.0 1.0 1.0	0	1.2	0	\$54.7	\$7.4
#12 - Super Bus	0	0	0.7 0.3 1.1	0	0	3.6	0	\$4.4	\$0.3
#13 - Highway Plan	0	0	45.7 17.7 63.4	0	0	1.3	0	\$47.0	\$17.7
#15 - Virginia Railway Express	0	0	0	0	0	1.4	0.1	\$5.9	\$0.1
						1.4	4.6		\$6.0

Annualization Factors (@ 7.0% discount rate as per FTA / OMB)

Bus Service = 12 years = 0.126

All other capital = 30 years = 0.081

Right-of-way = 100 years = 0.070

Source: BRW/Dewberry & Davis

KEY:

Construction Cost	ROW Cost	Total Cost
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TABLE E
NET OPERATING COST (ANNUAL COST LESS TRANSIT FARES) (MILLIONS OF \$)
SCREEN 2B ANALYSIS

STRATEGY	I-66 SOV	I-66 HOV	ARTERIAL ROADWAYS	METRORAIL	LIGHT RAIL TRANSIT	BUS SERVICE	VRE	Operating Cost Revenues	Net Cost
Baseline	0	0	0	0	0	0	0	0	0
Enhanced Baseline	0	0	0	0.00 0.46 (0.46)	0	3.39 1.71 1.68	0	3.39 2.16	1.22
#1 - General Purpose Lanes + HOV Reversible Lanes	0.38 0.00 0.38	0.68 0.00 0.68	0.24 0.00 0.24	0.00 0.99 (0.99)	0	2.42 1.64 0.78	0	3.72 2.63	1.09
#5 - HOV Reversible Lanes + Metrorail to Centreville	0	0.68 0.00 0.68	0.07 0.00 0.07	12.06 10.55 1.51	0	2.90 0.03 2.87	0	15.71 10.58	5.13
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	0.38 0.00 0.38	0.68 0.00 0.68	0.24 0.00 0.24	12.06 10.47 1.59	0	2.42 0.02 2.40	0	15.77 10.49	5.29
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	0.38 0.00 0.38	0.38 0.00 0.38	0.24 0.00 0.24	12.06 14.19 (2.13)	16.00 4.88 11.12	2.26 (0.51) 2.77	0	31.31 18.55	12.75
#11 - I-66 Express / Local	1.78 0.00 1.78	0.86 0.00 0.86	0.00 0.00 0.00	0.00 0.83 (0.83)	0	3.06 1.55 1.51	0	5.70 2.38	3.31
#12 - Super Bus	0	0	0.07 0.00 0.07	0.00 0.91 (0.91)	0	8.87 2.53 6.34	0	8.93 3.44	5.49
#13 - Highway Plan	0	0	5.23 0.00 5.23	0.00 0.60 (0.60)	0	3.22 1.71 1.52	0	8.45 2.31	6.14
#15 - Virginia Railway Express	0	0	0	0.00 0.46 (0.46)	0	3.39 1.69 1.70	1.00 0.46 0.54	4.39 2.61	1.78

KEY:

Operating Cost	Revenues	Net Cost
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Source: BRW, Inc.

**TABLE F-1
COMPARISON OF POTENTIAL RIGHT-OF-WAY IMPACTS
SCREEN 2B ANALYSIS**

STRATEGY	I-66 RIGHT-OF-WAY						ASSESSED VALUE OF PARCELS IMPACTED	OTHER ROW COSTS (Millions of \$) (Including all property not adjacent to I-66)	TOTAL ESTIMATED ROW COST ¹ (Millions of \$)
	NUMBER OF RESIDENTIAL PARCELS IMPACTED		NUMBER OF NON-RESIDENTIAL PARCELS IMPACTED						
	Whole Takes	Partial Takes	Whole Takes	Partial Takes	Residential (Millions of \$)	Non-Residential (Millions of \$)			
Baseline	*	*	*	*	*	*		-	\$0.0
Enhanced Baseline	*	*	*	*	*	*		-	\$0.0
#1 - General Purpose Lanes + HOV Reversible Lanes	46	60	0	26	\$12.0	\$23.0		\$170.6	\$205.6
#5 - HOV Reversible Lanes + Metrorail to Centreville	18	49	0	20	\$6.0	\$7.0		\$42.1	\$55.1
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	46	60	0	26	\$12.0	\$23.0		\$208.1	\$243.1
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	10	70	3	37	\$9.0	\$11.0		\$283.1	\$303.1
#11 - I-66 Express / Local	185	265	8	79	\$48.0	\$58.0		\$0.0	\$106.0
#12 - Super Bus	*	*	*	*	*	*		\$4.6	\$4.6
#13 - Highway Plan	*	*	*	*	*	*		\$331.6	\$331.6
#15 - Virginia Railway Express	*	*	*	*	*	*		\$1.4	\$1.4

NOTES: ¹These costs are also included in capital costs.

* Specific parcels needed for right of way adjacent to I-66 were identified and assessed values obtained from county tax records. The assessed values are for parcels as they are presently zoned. For all other transportation improvements outside the immediate I-66 corridor, right of way costs were estimated as a function of estimated construction cost.

Source: BRW/Dewberry & Davis

**TABLE F-2
COMPARISON OF POTENTIAL RIGHT-OF-WAY IMPACTS ALONG I-66
SCREEN 2B ANALYSIS**

STRATEGY	PERCENTAGE OF FRONTAGE IMPACTED				
	EAST OF ROUTE 50 (6.6 MILES)		WEST OF ROUTE 50 (19.0 MILES)		
	NORTHSIDE (%)	SOUTHSIDE (%)	NORTHSIDE (%)	SOUTHSIDE (%)	
Baseline	NA	NA	NA	NA	NA
Enhanced Baseline	NA	NA	NA	NA	NA
#1 - General Purpose Lanes + HOV Reversible Lanes	33	0	49		8
#5 - HOV Reversible Lanes + Metrorail to Centreville	23	0	34		6
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	33	0	49		8
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	23	26	15		21
#11 - I-66 Express / Local	82	77	68		72
#12 - Super Bus	NA	NA	NA		NA
#13 - Highway Plan	NA	NA	NA		NA
#15 - Virginia Railway Express	NA	NA	NA		NA

TABLE G
EFFECTIVENESS / EFFICIENCY
SCREEN 2B ANALYSIS

STRATEGY	ANNUAL COST / INCREMENT OF I-66 DAILY VEHICLES SERVED	ANNUAL COST / INCREMENTAL I-66 HOV USER	TOTAL ANNUAL HIGHWAY COST / INCREMENTAL ANNUAL STUDY AREA VEHICLE TRIPS	METRO RAIL ANNUAL COST / INCREMENTAL RIDER	LIGHT RAIL TRANSIT ANNUAL COST / ANNUAL RIDER	BUS ANNUAL COST / ANNUAL INCREMENTAL RIDER	VRE ANNUAL COST / ANNUAL INCREMENTAL RIDER	TOTAL TRANSIT ANNUAL INCREMENTAL COST / ANNUAL INCREMENTAL TRANSIT RIDER
Baseline	NA	NA	NA	NA	NA	NA	NA	NA
Enhanced Baseline	\$0.00	\$0.00	\$0.00	-\$1.23	NA	\$0.91	NA	\$0.79
#1 - General Purpose Lanes + HOV Reversible Lanes	\$3.66	\$6.65	\$3.12	-\$0.86	NA	\$0.54	NA	\$0.35
#5 - HOV Reversible Lanes + Metrorail to Centreville	\$54.00	\$5.12	\$8.88	\$6.48	NA	\$63.58	NA	\$7.07
#8 - General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	\$3.72	\$7.24	\$3.44	\$6.64	NA	\$109.51	NA	\$7.19
#9 - General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	\$1.79	-\$107.73	\$2.80	\$5.02	\$13.08	-\$3.64	NA	\$11.76
#11 - I-66 Express / Local	\$1.90	-\$3.58	\$1.64	\$0.32	NA	\$0.87	NA	\$0.87
#12 - Super Bus	\$0.00	\$0.00	\$0.18	-\$1.34	NA	\$1.97	NA	\$1.79
#13 - Highway Plan	\$0.00	NA	\$4.91	-\$1.63	NA	\$0.82	NA	\$0.64
#15 - Virginia Railway Express	\$0.00	\$0.00	\$0.00	-\$1.23	NA	\$0.92	\$51.48	\$2.25

Source: BRW, Inc.

SUMMARY OF PLANNING ASSUMPTIONS
TO GUIDE THE DEVELOPMENT OF
SCREEN 2 MULTI-MODAL INVESTMENT STRATEGIES

Ten Planning Assumptions have helped guide the development of Screen 2 multi-modal investment strategies for the I-66 Corridor MIS. These Planning Assumptions explicitly state key assumptions to focus the efforts of the study team.

1. **THE CONSTRAINED LONG RANGE PLAN (CLRP) AND OTHER TRANSPORTATION STUDIES**
The I-66 Corridor MIS assumes the transportation facilities and services outside the primary study area as defined in the most recent CLRP. The CLRP includes an additional concurrent flow HOV lane in both directions on I-495.
2. **AIR QUALITY**
The selected investment strategy for the I-66 corridor will be developed in conjunction with other projects in the regional transportation plan to meet air quality conformity requirements.
3. **LAND USE**
The MWCOC Round 5.3 land use projections are a reasonable representation of future land use development patterns in the I-66 Corridor MIS study area as reflected in current locally adopted plans and policies.
4. **TRANSIT SERVICE**
For those I-66 corridor MIS alternatives that include a fixed-guideway transit component, the preferred transit service concept for the corridor is to use the fixed-guideway component (or components) to perform a line haul function and to use buses as a feeder to the fixed-guideway system. This concept would be enhanced with station area parking, pick-up/drop-off areas and transfer facilities along with selected bus routes to serve major generators not served by the fixed guideway system.
5. **NORFOLK-SOUTHERN RIGHT-OF-WAY**
The existing Norfolk-Southern rail right-of-way from Manassas-Gainesville will be available for the extension of VRE service.

6. **HOV OPERATIONS**

I-66 east of the Capital Beltway and the HOV lanes currently included in the CLRP for the Capital Beltway will operate as an HOV-3+ facility in the peak direction during peak hours within the planning time frame (2020) of the I-66 Corridor MIS.

7. **ACCESS TO TYSONS**

The primary access route between the I-66 Corridor and Tysons Corner will continue to be along I-66 and I-495.

8. **LIGHT RAIL TRANSIT (LRT)/METRORAIL TRANSFER**

A transfer at the Vienna Metrorail station between LRT service and Metrorail service is feasible from an engineering perspective.

9. **COST OF TRAVEL**

The relative cost of travel by auto and travel by transit will not change significantly by the forecast year 2020.

10. **CAPITAL COST CONSTRAINT**

For the purposes of Screen 2, alternative investment strategies should not be constrained by capital dollars currently available.

Source: BRW, Inc.
9/30/97, 11/20/97



I-66
CORRIDOR

**Major
Investment
Study**



MEMORANDUM

TO: Technical Advisory Committee

FROM: BRW, Inc.

DATE: April 6, 1998

SUBJECT: Recommended Unit Cost Data for Use in Screen 2B (REVISED)

An important element of the Screen 2B evaluation of alternative strategies is the comparison of the estimated capital and operating costs, and the associated cost-effectiveness measures, with respect to each of the various alternatives. As an initial step in this process, the Study Team has summarized recent capital and operating cost data for the various types of highway and transit services either presently operating, or proposed to operate, in the study area. For each cost element shown, a Study Team recommendation is presented.

This memorandum reflects the comments received at the April 2nd TAC meeting and includes updated information received from the various participating agencies through April 6, 1998. Additional review and comment of the information presented in this updated memorandum is requested from the TAC membership for discussion at the April 16, 1998 TAC meeting.

Capital and operating cost estimates are presented in this revised document as follows:

- Highway capital and operating costs
- Transit capital costs
 - A. Bus
 - B. Virginia Railway Express (commuter rail)
 - C. Metrorail
 - D. Light Rail Transit (LRT)
- Transit operating costs
 - A. Bus
 - B. Virginia Railway Express (commuter rail)
 - C. Metrorail
 - D. Light Rail Transit (LRT)

This memorandum only reflects information received through this date, and will likely be modified for use in Screen 3 as more up to date information becomes available.



HIGHWAY SYSTEM COSTS

Highway system costs consist of capital costs, including right-of-way acquisition costs, and annual operating and maintenance costs. Capital costs are defined as those costs associated with the widening and reconstruction of existing facilities, the construction of new location facilities, and "spot" improvements such as the provision of an interchange or a grade separation. The following information summarizes recent experience in the Northern Virginia region with these general types of highway improvements:

Widening / Reconstruction of Existing Facilities: (costs shown exclude right-of-way costs)

- **VDOT - \$1.0 million per lane-mile - \$2.0 million per route-mile**
(widening from 2 to 4 lanes on typical primary and secondary routes)
- **Fairfax County - \$800 per linear foot - \$4,424,000 per route-mile**
(widening from 2 to 4 lanes on typical secondary, urban routes involving significant utility relocations, drainage improvements, and maintenance of traffic considerations)
- **Prince William County - \$363.00 per linear foot - \$1,917,000 per route-mile**
(widening from 2 to 4 lanes on typical secondary, suburban routes with low to moderate levels of utility relocation, drainage improvements and maintenance of traffic involved)
- **Widening of existing 4-lane divided to 6-lane divided - \$2,154,200 per route-mile**
 - 4-lane divided roadway (new location) - \$3,754,100 per route-mile
 - 6-lane divided roadway (new location) - \$6,056,200 per route-mile
 - 4-lane divided rural parkway (new location) - \$5,253,600 per route-mile

Based on this information, the Study Team recommendations are as follows:

- ***For all proposed roadway widenings / reconstructions located to the east of Route 28 in Fairfax County use the general unit cost value of \$4,425,000 per route-mile.***
- ***For all proposed roadway widenings / reconstructions located to the west of Route 28 in Fairfax County and in all parts of Prince William County, use the general unit cost value of \$2,000,000 per route-mile.***
- ***For all new location highway facilities located anywhere in the study area, use the general unit cost value of \$3,755,000 per route-mile for 4-lane divided facilities and \$6,100,000 per route-mile for 6-lane divided facilities.***

- *Improvements to the I-66 mainline and its interchanges are to be costed separately using recent VDOT experience with similar Interstate type improvement projects.*
- *Based on the current VDOT 6-Year CIP, the cost of providing urban interchanges along primary highways in Northern Virginia is estimated to be approximately \$32,000,000 at each location. This includes design and right-of-way costs.*

Right-of-Way Costs:

Based on recent experience in Northern Virginia, highway improvement right-of-way (ROW) costs have been observed to vary dramatically on a project by project basis. Recent VDOT experience with ROW costs are shown below:

<u>Project</u>	<u>Total Cost</u>	<u>ROW Cost</u>	<u>ROW % of Total</u>
Liberia Avenue, 1.8 miles	\$12,251,000	\$1,995,000	16.3%
Route 29 widening, 1.1 miles	\$13,985,000	\$6,000,000	42.9%
Route 50 widening, 1.5 miles	\$ 7,830,000	\$ 615,000	7.9%
Route 50, 2 to 4 lanes, 2.7 miles	\$ 6,428,000	\$1,515,000	23.6%

Fairfax County right-of-way costs have similarly ranged from essentially zero where sufficient right-of-way had been previously dedicated, to as much as 50% of the base construction cost. Prince William County right-of-way costs have averaged approximately \$2.57 per square foot of right-of-way required over the past few years. For a "typical" 4-lane divided roadway on new location in Prince William County, ROW costs have averaged about \$1,574,100 per route-mile, or about 42% of the average construction cost of \$3,754,100 per route-mile.

For the purposes of MIS level cost estimation, the Study Team recommends the use of a factor of 50% of the estimated base construction cost as the value of right-of-way cost.

Roadway Maintenance Costs:

Based upon information obtained from VDOT, average annual maintenance costs per lane-mile of highway, including the cost of snow removal, is as follows:

Interstate Highways	\$17,100
Primary Highways	\$16,000
Secondary Highways	\$ 5,900

The Study Team recommends the use of these values without adjustment.

TRANSIT SYSTEM COSTS

As in the case of highway system elements, transit system costs include both capital and operating & maintenance costs. Each of these cost elements is presented below:

Transit Capital Costs:

Bus Costs

- WMATA - \$300,000 per vehicle (standard 40-foot transit bus)
- Fairfax County - \$250,000 per vehicle (Fairfax Connector standard 40-foot bus)
\$325,000 - low floor, high speed buses for Dulles Toll Road service
- PRTC/OmniRide - \$275,000 per vehicle (40-foot full size bus)

The Study Team recommends the use of an average value of \$300,000 for any new buses.

Virginia Railway Express (Commuter Rail) Costs:

VRE and NVTC staff have prepared an independent estimate of the capital and operating costs (in current year dollars) associated with an extension of VRE service from the Downtown Manassas VRE station to Gainesville. The major difference between these VRE/NVTC estimates and the earlier unit cost estimates dated March 24, 1998 is the proposed use of self-propelled, Diesel Multiple Units (DMUs) to provide the Gainesville extension service in contrast to the powered locomotive / unpowered passenger car trainsets currently operated by VRE. This supplemental cost information is summarized below:

1. Additional Track and/or Signal Work: Total = \$16.5 million
 - A. Ten (10) miles of a second track with ten #10 industry turnouts
 - B. Four #20 crossovers
 - C. Installation of TCS signals on both existing and new tracks - 10 miles
 - D. Addition of Elektra Code along 20 miles of railroad between Bull Run and Cameron Run.
2. Additional Passenger Equipment (assumes use of Diesel Multiple Units - DMU)
 - A. Five trains each day
 - B. Eight DMU vehicles to operate five trains each day
 - C. (\$2.4 million / DMU vehicle) X (8 vehicles) = \$19,200,000.
3. Cost of Additional Station (one station assumed - Gainesville - Wellington Road at Route 29).

- A. Single platform station at site = $\$700,000 \times 1 = \$700,000$
- B. Maximum of 500 parking spaces at site (BRW assumption) \times (1 new station) \times ($\$2,500$ per parking space - VRE estimate) = $\$1,250,000$.

Note: Right-of-way cost associated with this proposed new station has been estimated by BRW at 50% of the estimated station construction cost (analogous to highway right-of-way cost assumptions.)

- 4. Estimated Daily Operating Cost
(5 trains / day) \times (20 miles /day/train) \times ($\$40$ / train mile) = $\$4,000$ per day

The Study Team recommends the use of this VRE / NVTC supplied capital and operating cost data without change.

Metrorail Costs:

Unit costs associated with the possible extension of the Metrorail system beyond the existing Vienna terminus station were developed from a base of the similar unit cost values employed during the course of the recently completed Dulles Corridor Transportation Study. The Dulles Study unit costs for a Metrorail-like extension from the West Falls Church Station to Dulles Airport or beyond had been developed with input and review by WMATA staff and were thus viewed as a good starting point for this related analysis. The Dulles Corridor unit cost values for the year 1994 were adjusted to reflect 1998 values using a cost escalation factor provided by WMATA.

Table 3-1 (attached) presents a summary of the individual unit cost values proposed for use in the Screen 2B level costing of the potential Metrorail extension from Vienna to the Centreville area. It should be particularly noted that these unit cost values are presently (as of April 6, 1998) undergoing an independent review by WMATA. Several of these unit cost values may be adjusted slightly based on WMATA's review.

Site specific adjustments to these general unit costs will be made to reflect station specific factors such as the number of proposed parking spaces and major access roadway requirements.

Pending the completion of the WMATA review, the Study Team recommends the use of the unit cost values shown in Table 3-1 without further adjustment.

Light Rail Transit Costs:

As noted previously, this transit mode does not currently exist in the Washington Metropolitan area. Unit cost data from other cities in the United States where LRT is either presently operating or where a similar MIS considering LRT has been completed was compiled by BRW staff. Specifically, unit cost information generated during the course of the recently completed Norfolk - Virginia Beach Corridor MIS (which has now entered the preliminary engineering / DEIS phase of project development) was used as the starting point in this analysis.

Table 3-2 (attached) illustrates the LRT system unit cost values which were employed on the Norfolk - Virginia Beach project and the adjustments to these 1995 \$ values to reflect 1998 \$ conditions. Additional information on LRT unit costs is still being compiled from other communities and may be utilized if determined to be more appropriate.

For the purpose of the Screen 2B evaluation process, the Study Team recommends the use of the updated 1998 LRT unit cost values as presented in Table 3-2.

Transit Operating Costs:

Bus Operating Costs:

- Fairfax County Connector (overall system average costs)
 - \$ 2.88 per platform-mile
 - \$51.63 per platform-hour
- PRTC / OmniRide
 - \$45.00 per platform-hour
 - \$38.00 per vehicle-hour (smaller, OmniLink vehicles)
 - \$61.07 per vehicle-hour (larger, OmniRide operations with about 50% deadhead mileage)
- WMATA Metrobus

Awaiting receipt of most current operational data from WMATA.

Pending receipt of additional information from WMATA, the Study Team recommends the use of a value of \$52.00 per platform-hour for all bus operations in the study area.

Virginia Railway Express (Commuter Rail):

As noted previously, VRE and NVTC staff have prepared an independent estimate of the daily operating cost than would be associated with an extension of VRE service from the Downtown Manassas station to a new terminus station in the Gainesville area. The estimated daily operating cost of this new service is as follows:

$(5 \text{ trains / day}) \times (20 \text{ miles / day / train}) \times (\$40 / \text{train-mile}) = \$4,000 \text{ per day.}$

Metrorail Operating Costs:

- Metrorail (as of April 6, 1998)
 - \$2.00 per car-mile (with operator)
 - \$1.48 per car-mile (without operator)

This translates into a cost per train-mile for a typical 8-car train with one manned and 7 unmanned vehicles of $(1) \times (\$2.00) + (7) \times (\$1.48) = \$12.36 \text{ per train-mile.}$

The Study Team recommends the use of this value per train-mile for all Metrorail service.

Note: WMATA staff are currently reviewing this information and associated assumptions. They may suggest the use of an adjusted average operating cost per train-mile to reflect a likely mix of 4-car, 6-car, and 8-car trains which might be operated on an extended Orange Line service in the year 2020. If any such changes are suggested by the WMATA staff, they will be reported to the TAC in the context of the Screen 2B operating & maintenance cost estimation evaluation.

Light Rail Transit (LRT):

As noted earlier, data on LRT operating costs is still being compiled from other urban areas in which this transit mode is currently being operated. This information will be provided to the TAC upon receipt.

The Study Team recommends the use of this information without modification.

CONCLUDING COMMENTS:

The values presented for the various capital and operating cost elements as described above are intended to be general in nature. They represent "average" or "typical" unit cost values which are to be used in the comparison between alternative Screen 2B (and Screen 3) multi-modal strategies.

The specific costs associated with a more detailed engineering study of any specific improvement, whether it be a proposed Metrorail station in the Centreville area of Fairfax County or the widening of an existing 2-lane highway in Prince William County to a 4-lane divided cross-section, will be different from the values estimated from the use of these unit costs. However, for the purposes of the I-66 MIS, the unit cost values presented here are deemed to be reasonable and appropriate.

Table 3-1
UPDATED UNIT COSTS FOR METRORAIL - I-66 Major Investment Study
 BRW, Inc.
 April 6, 1998

Page 1 of 2

Line	Description of Cost Item	Unit	Metrorail Cost (\$) 06/94 - Dulles	Metrorail Cost (\$) 03/98 - I-66 MIS (1)
TRACKWORK:				
1	Ballasted Track	TF	193	216
2	Direct Fixation Track	TF	238	266
3	Special Trackwork			
3a	Ballasted Double Crossover #10	EA	282,100	315,585
3b	Direct Fixation Double Crossover #10	EA	423,100	473,322
3c	Ballasted Turnout #10	EA	94,000	105,158
3d	Direct Fixation Double Crossover #8	EA	351,000	392,664
3e	Direct Fixation Turnout #8	EA	108,300	121,155
3f	Direct Fixation Turnout #6	EA	65,000	72,716
TRACTION POWER:				
4	Traction Power Substation	EA	2,056,400	2,300,495
5	Traction Power Tie Breaker	EA	338,800	379,016
6	Traction Power (third) Rail	TF	125	140
GUIDEWAY:				
7	Aerial Structure - Single Columns	LF	6,580	7,361
8	Aerial Structure - Separate Columns	LF	8,360	9,352
9	Aerial Structure for #10 Crossover	LF	8,770	9,811
10	Cut-and-Cover In-Street	LF	12,760	14,275
11	Cut-and-Cover Out-Street	LF	9,085	10,163
12	At-Grade Ballasted	LF	625	699
13	Embankment Section 10'	LF	680	761
14	Embankment Section 20'	LF	1,510	1,689
15	Open-Cut Section 10' Depth	LF	680	761
16	Open-Cut Section 20' Depth	LF	2,030	2,271
17	Open-Cut Section 30' Depth	LF	4,130	4,620
18	Retained Cut Section - 10' Height of Wall	LF	920	1,029
19	Retained Cut Section - 20' Height of Wall	LF	3,280	3,669
20	Retained Cut Section - 30' Height of Wall	LF	5,200	5,817
21	Retained Fill Section - 10' Height of Wall	LF	860	962
22	Retained Fill Structure - 20' Height of Wall	LF	3,410	3,815
23	Portal Structure	EA	390,000	436,293
24	Pumping Station	EA	226,700	253,609
25	Vent Shaft	EA	949,400	1,062,094

Notes: (1) Escalation factor of 1.1187 applied to Dulles Unit Costs, as per WMATA staff recommendation

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Table 3-1 (Cont'd)
 UPDATED UNIT COSTS FOR METRORAIL - I-66 Major Investment Study
 BRW, Inc.
 April 6, 1998

Line	Description of Cost Item	Unit	Metrorail Cost (\$) 06/94 - Dulles	Metrorail Cost (\$) 03/98 - I-66 MIS
PASSENGER STATIONS:				
26	Std. At-Grade Station, Center Platform	EA	10,666,000	11,932,054
27	Std. At-Grade Station, Side Platform	EA	13,011,000	14,555,406
28	Std. Aerial Station, Center Platform	EA	16,012,000	17,912,624
29	Std. Aerial Station, Side Platform	EA	20,551,000	22,990,404
ROADWAY MODIFICATIONS:				
30	Site specific elements as required			
SIGNAL AND AUTOMATIC TRAIN CONTROL:				
31	Train Control System - Passenger Station	EA	1,317,000	1,473,328
32	Train Control System - Line	TF	102	114
33	Train Control System - Double Crossover	EA	1,031,000	1,153,380
34	Communications System - Passenger Station	EA	852,000	953,132
35	Communications System - Line	TF	17	19
RIGHT-OF-WAY				
36		LS		
FARE VENDING:				
37	Fare Vending Equipment (Per Station)	EA	906,600	1,014,213
VEHICLES:				
38	Rail Passenger Vehicle (Standard)	EA	1,538,000	2,500,000 (2)
39	Related Facilities (Maintenance and Operations) Yard and Shop	LS	NA	NA (3)
CONTINGENCIES AND ADD-ON ALLOWANCE:			20%	20%
SPECIAL CONDITIONS:				
40	Utilities	EA SPACE LF	Stipulated	
41	Culverts		Stipulated	
42	Landscaping		Stipulated	
43	Station w/o Park-and-Ride		22,000	24,611
44	Station with Park-and-Ride		363	406
45	Acoustical Barrier Wall		180	201

LF = Linear Foot (double track)
 EA = Each
 LS = Lump Sum
 TF = Track Feet (i.e., each pair of rails)

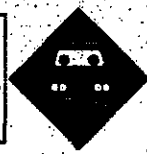
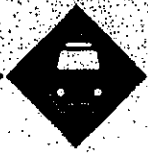
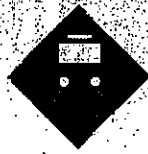
Notes: (2) Most recent procurement vehicle cost as per WMATA staff
 (3) Assumes no need for additional maintenance and operations yard for Metrorail extension to Centreville area

Table 3-2
UPDATED UNIT COSTS FOR LIGHT RAIL TRANSIT (LRT) - I-66 Major Investment Study
 BRW, Inc.
 April 8, 1998

Line	Description of Cost Item	Unit	Norfolk - Virginia Beach Corridor MIS - LRT Cost (\$) - 1995	I-66 MIS LRT Cost (\$) - 1998 (1)	Rounded Values 1998 \$
TRACKWORK:					
1	Ballasted Track	TF	140	157	160
2	Direct Fixation Track	TF	260	291	295
3	Embedded Track	TF	500	559	560
4	Ballasted Turnout #10	EA	62,000	69,359	69,400
TRACTION POWER:					
5	Traction Power Substation	EA	885,000	990,050	990,000
6	Traction Power Tie Breaker	EA	150,000	167,805	168,000
7	Traction Power (overhead catenary)	TF	92	103	105
GUIDEWAY:					
8	Aerial Structure - Single Track	LF	3,500	3,915	3,920
9	Aerial Structure - Double Track	LF	4,600	5,146	5,150
13	Track Removal	TF	40	45	45
14	At-Grade Ballasted	LF	140	157	160
15	Street Modification for Embedded Single Track	LF	3,500	3,915	3,920
16	Street Modification for Embedded Double Track	LF	4,600	5,146	5,150
17	Retained Fill Section - 10' Height of Wall	LF	1,850	2,070	2,070
PASSENGER STATIONS:					
18	Std. At-Grade Station, Center Platform	EA	710,000	794,277	794,300
19	Std. At-Grade Station, Side Platform	EA	1,280,000	1,431,936	1,432,000
20	Std. Aerial Station, Center Platform	EA	2,420,000	2,707,254	2,707,300
21	Station Park-and-Ride Spaces	SPACE	1,500	1,678	1,680
ROADWAY MODIFICATIONS:					
22	Site specific elements as required				
SIGNAL AND AUTOMATIC TRAIN CONTROL:					
23	Train Control System - Passenger Station	EA	700,000	783,090	783,100
24	Communications System - Passenger Station	EA	100,000	111,870	111,900
25	Communications System - Line	TF	25	28	30
RIGHT-OF-WAY					
26	Right-of-Way (site specific requirements)				
FARE VENDING:					
27	Fare Vending Equipment (Per Station)	EA	100,000	111,870	111,900
VEHICLES:					
28	LRT Passenger Vehicle (Standard)	EA	2,100,000	2,349,270	2,350,000
29	Related Facilities (Maintenance and Operations) Yard and Shop	LS	21,128,000	23,635,894	23,636,000
CONTINGENCIES AND ADD-ON ALLOWANCE:			20%	20%	20%
SPECIAL CONDITIONS:					
30	Utilities			Stipulated	
31	Culverts			Stipulated	
32	Landscaping			Stipulated	

LF = Linear Foot (double track)
 EA = Each
 LS = Lump Sum
 TF = Track Feet (i.e., each pair of rails)

Notes: (1) Escalation factor of 1.1187 applied to Norfolk-Virginia Beach LRT Unit Costs to reflect recent experience with WMATA rail construction.



Screen 2B Recommendations

March 12, 1998



MEMORANDUM

Attachment #5

TO: I-66 MIS Policy Advisory Committee

FROM: Study Team
(BRW Consultant Team, VDOT and DRPT project staff)

RE: Screen 2B Recommendations

DATE: March 12, 1998

As directed by the Committee, the Study Team has further evaluated alternative rail strategies to identify the most promising rail options to carry forward for further analysis in Screen 2B. These results and recommendations were reviewed with the Technical Advisory Committee on February 27, 1998.

The document is organized as follows:

- **Summary Table 1** – presents the strategies recommended for continued study in Screen 2B by the Study Team and the TAC.
- **Summary Table 2** – presents five rail questions with supporting analysis, broad implications and strategy specific implications
- **Strategy Maps** – provides diagrams showing the key features of each strategy.
- **Technical Appendix** – provides technical information in support of new or modified strategy recommendations since the January 29th Policy Advisory Committee meeting.

Summary Table 1
SCREEN 2B STRATEGY RECOMMENDATIONS

STRATEGIES ADOPTED 1-29-98	STUDY TEAM RECOMMENDATIONS 2-26-98	TAC RECOMMENDATIONS 2-27-98	PAC RECOMMENDATION 3-12-98
Baseline	✓	✓	
Enhanced Baseline	✓	✓	
#1 – General Purpose Lanes + HOV Reversible Lanes ^{1/}	✓	✓	
#3 – General Purpose Lanes + Metrorail to Gainesville ^{2/}			
#5 – HOV Reversible Lanes + Metrorail to Centreville	✓	✓	
#5 "G" – HOV Reversible Lanes + Metrorail to Gainesville ^{2/}			
#7 – General Purpose Lanes + HOV Reversible Lanes + 3 Light Rail Lines			
#8 – General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	✓	✓	
#9 – General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	✓	✓	
#9 "LRT-G" – General Purpose Lanes + 2 Light Rail Lines; Gainesville to Dulles, Centreville to Manassas + Metrorail to Centreville ^{2/}			
#9 "LRT-50" – General Purpose Lanes + 2 Light Rail Lines; Manassas to Dulles, Dulles to Fair Oaks + Metrorail to Centreville ^{3/}		✓	
#11 – I-66 Express / Local ^{1/}	✓	✓	
#12 – Super Bus ^{2/}		✓	
#13 – Highway Plan	✓	✓	

✓ = Strategy recommended to be carried forward to Screen 2B.

^{1/} These strategies would be modified to preserve ROW on I-66 for Metrorail.

^{2/} The PAC requested more information on these strategies.

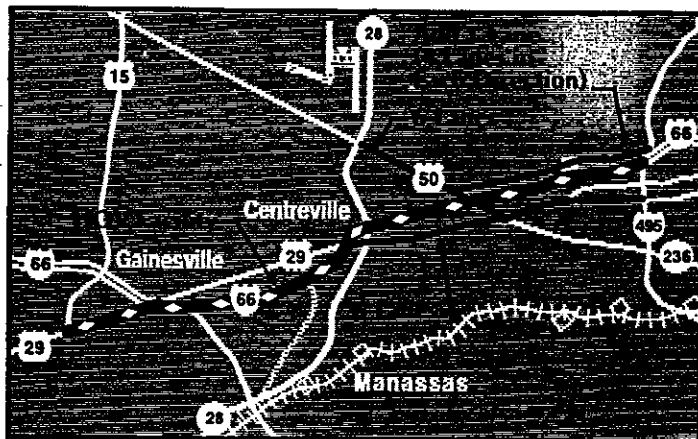
^{3/} This strategy was suggested by the TAC on 2-27-98.

Summary Table 2 – Rail Questions

Question	Supporting Analysis	Broad Implications	Strategy Specific Implications
Metrorail to Centreville?	Forecasted ridership on the extension and for the region, percentage of transit work trips to the core, corridor vehicle occupancy and person throughput all indicate an extension to Centreville should be studied in Screen 2B.	Right of way should be preserved in the median of I-66 for the future extension of Metrorail.	Modify strategy 1 and 11 to include Metrorail right of way.
LRT on Route 29?	Providing two competing transit rail services within approximately one mile of one another is not justified.	Preservation of right of way for Metrorail along I-66 to Centreville precludes LRT in the 29 corridor.	Do not study strategy 7 in Screen 2B.
LRT on Route 50?	<i>An LRT branch connecting Metrorail in the Fair Oaks area with Chantilly has been recommended by the TAC.</i>	<i>Addition of strategies or failure to finish consolidation of strategies could affect study completion.</i>	<i>If requested, analyze strategy 9 LRT 50 and report interim results to the PAC on May 14th.</i>
LRT Route 28 alignment south of Centreville?	Forecasted ridership on the Route 28 line (14,000 per day) is comparable to forecasts for the Route 28 Bypass line (12,000 per day). This and other analysis completed through Screen 2A indicate that either could provide feasibility information to conclude the MIS.	The MIS need only study one alignment in Screen 2B to determine feasibility. Subsequent study would be needed to determine a specific new alignment for LRT in this area.	Study strategy 9 in Screen 2B with a single Route 28 alignment as determined by the PAC.
Rail transit to Gainesville?	Metrorail extension from Centreville to Gainesville yielded substantially fewer riders per day than other end-of-line Metrorail segments. In comparing Metrorail vs. LRT, rail ridership and total regional trips are less west of Centreville with LRT than Metrorail.	No strategies including rail to Gainesville would be carried forward for analysis in Screen 2B.	Do not study in Screen 2B strategy 3, 5 G and 9 LRT-G.

Strategy #1 General Purpose Lanes and HOV

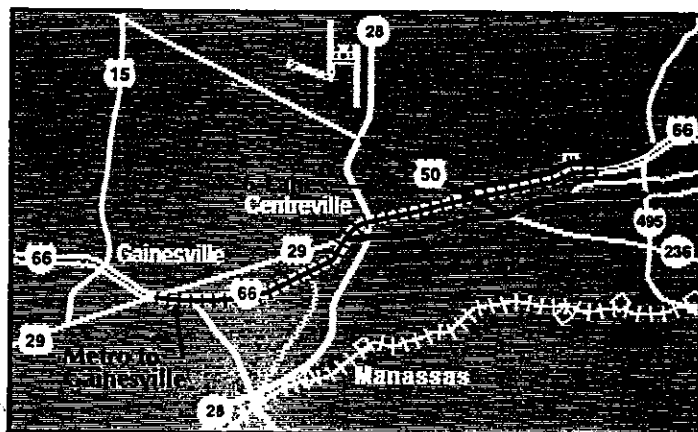
This strategy is primarily highway improvements. One general purpose lane would be added in each direction between I-495 and Route 50. In addition reversible, barrier-separated HOV lanes would be added to I-66 between I-495 and Gainesville. The HOV lanes would extend west from Gainesville on Route 29 through the intersection of Route 15. Route 50 would be widened to a six or eight-lane arterial from I-495 west to Route 28 and configured as a "super-arterial" with grade separations at most cross street intersections.



Strategy #3 General Purpose Lanes and Metrorail to Gainesville

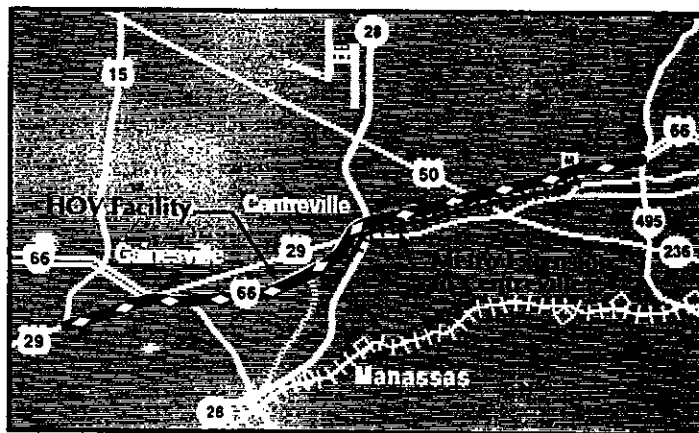
The improvements to I-66 would add one additional general purpose lane in each direction between I-495 and Route 50. Route 50 would be widened to a six or eight-lane arterial from I-495 west to Route 28 and configured as a "super-arterial" with grade separations at most cross street intersections.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Gainesville with a number of intermediate stations.



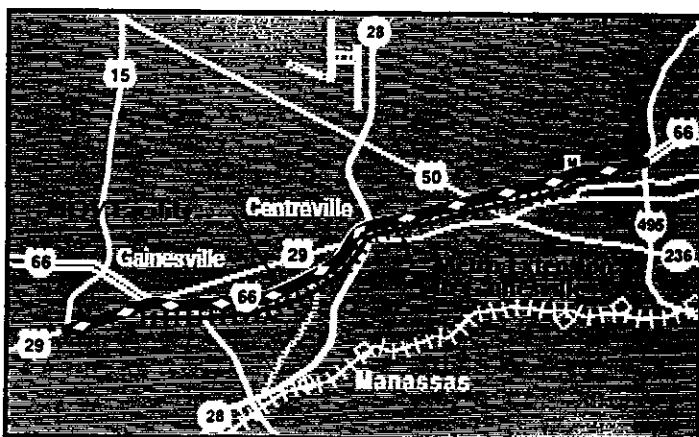
Strategy #5 HOV and Metrorail to Centreville

This strategy combines reversible, barrier-separated HOV lanes on I-66 with an extension of the existing Metrorail system to Centreville. HOV would also be extended from I-66 at Gainesville along Route 29 through the Route 15 intersection.



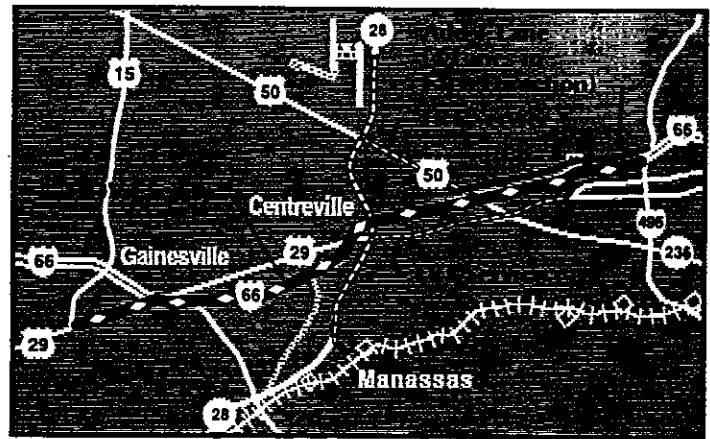
Strategy #5"G" HOV and Metrorail to Gainesville

This strategy combines reversible, barrier-separated HOV lanes on I-66 with an extension of the existing Metrorail system to Gainesville. HOV would also be extended from I-66 at Gainesville along Route 29 through the Route 15 intersection.



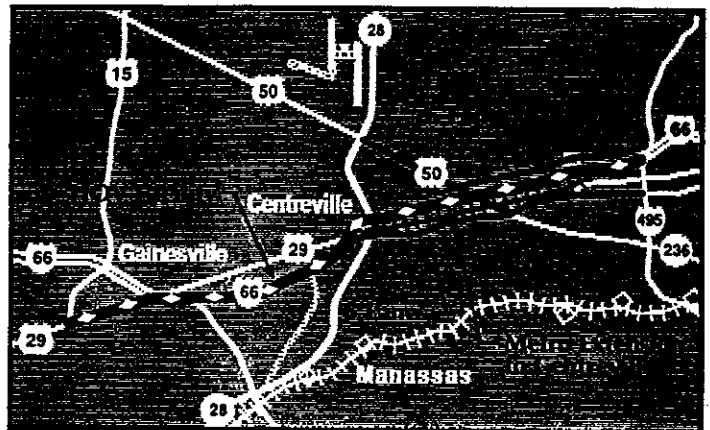
Strategy #7 General Purpose Lanes, HOV and Light Rail

This strategy would combine additional general purpose lanes and reversible, barrier-separated HOV lanes on I-66 with light rail lines to Route 28/50 and Manassas serving the existing Metrorail terminus at Vienna.



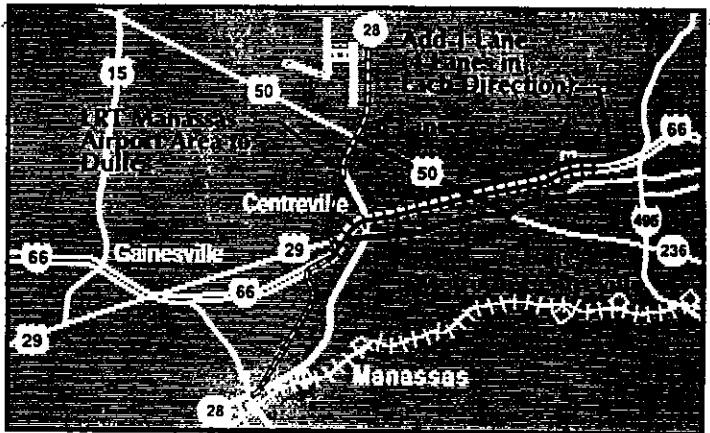
Strategy #8 General Purpose Lanes, HOV and Metrorail to Centreville

This strategy combines additional general purpose lanes on I-66, Route 29 and Route 50 and reversible, barrier-separated HOV as described in Strategy #1 with the extension of the existing Metrorail system to Centreville.



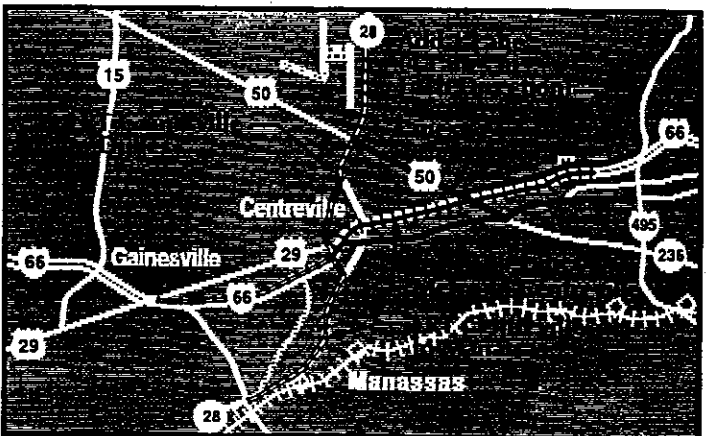
Strategy #9 General Purpose Lanes, Light Rail and Metrorail to Centreville

This strategy combines additional general purpose lanes on I-66, Route 29 and Route 50 with light rail service focused on an extended Metrorail terminus station at Centreville. The southern light rail line would follow the Route 28 Bypass south to the vicinity of the Manassas Airport. The northern light rail line would follow Stone Road and Route 28 north to the vicinity of Dulles Airport.



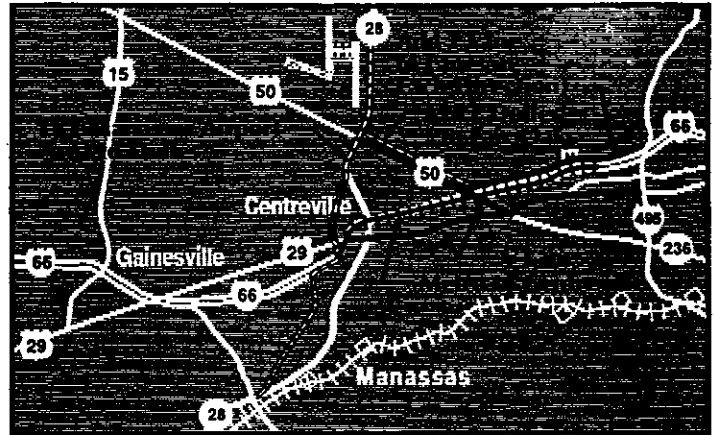
Strategy #9 "LRT-G" General Purpose Lanes, Light Rail and Metrorail to Gainesville

This strategy combines additional general purpose lanes on I-66, Route 29 and Route 50 with light rail service focused on an extended Metrorail terminus station at Centreville. The southern light rail line would connect Centreville and Manassas via Route 28. The northern light rail line would connect Gainesville and Dulles via I-66, Stone Road and Route 28.



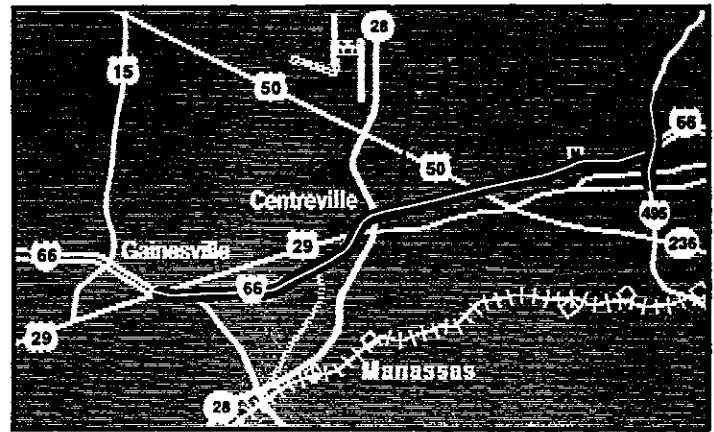
Strategy #9 "LRT-50" General Purpose Lanes, Light Rail and Metrorail to Centreville

This strategy combines additional general purpose lanes on I-66, Route 29 and Route 50 with two light rail lines and a Metrorail extension to Centreville. One light rail line would follow the Route 28 Bypass from the vicinity of the Manassas Airport to the vicinity of Dulles Airport. The second light rail line would run between Fair Oaks Mall and the vicinity of Dulles Airport on Route 50 and Route 28.



Strategy #11 I-66 Express/Local

This strategy would widen I-66 to six lanes in each direction with an express/local configuration. This strategy would also assume that the Beltway is widened to six lanes in each direction with an express/local configuration consistent with the Recommended Strategy Package in the January 1997 Capital Beltway Study MIS Results Report.



Strategy #12 Super Bus

This strategy would consist of significant bus system improvements that include expanding existing service, providing new service between various origins and destinations, reducing time between buses, and increasing the frequency of service on Metrorail to Vienna. This strategy is intended to represent a more flexible transit improvement that could better serve the travel patterns in the corridor. Major collection and attraction areas served by the Super Bus strategy are shown on the attached graphic.

Strategy #13 Highway Plan

This strategy would include selected roadway improvements that are part of the Fairfax County, Loudoun County, Prince William County, and City of Fairfax Comprehensive Plans but are not in the region's constrained long range plan. See attached map.

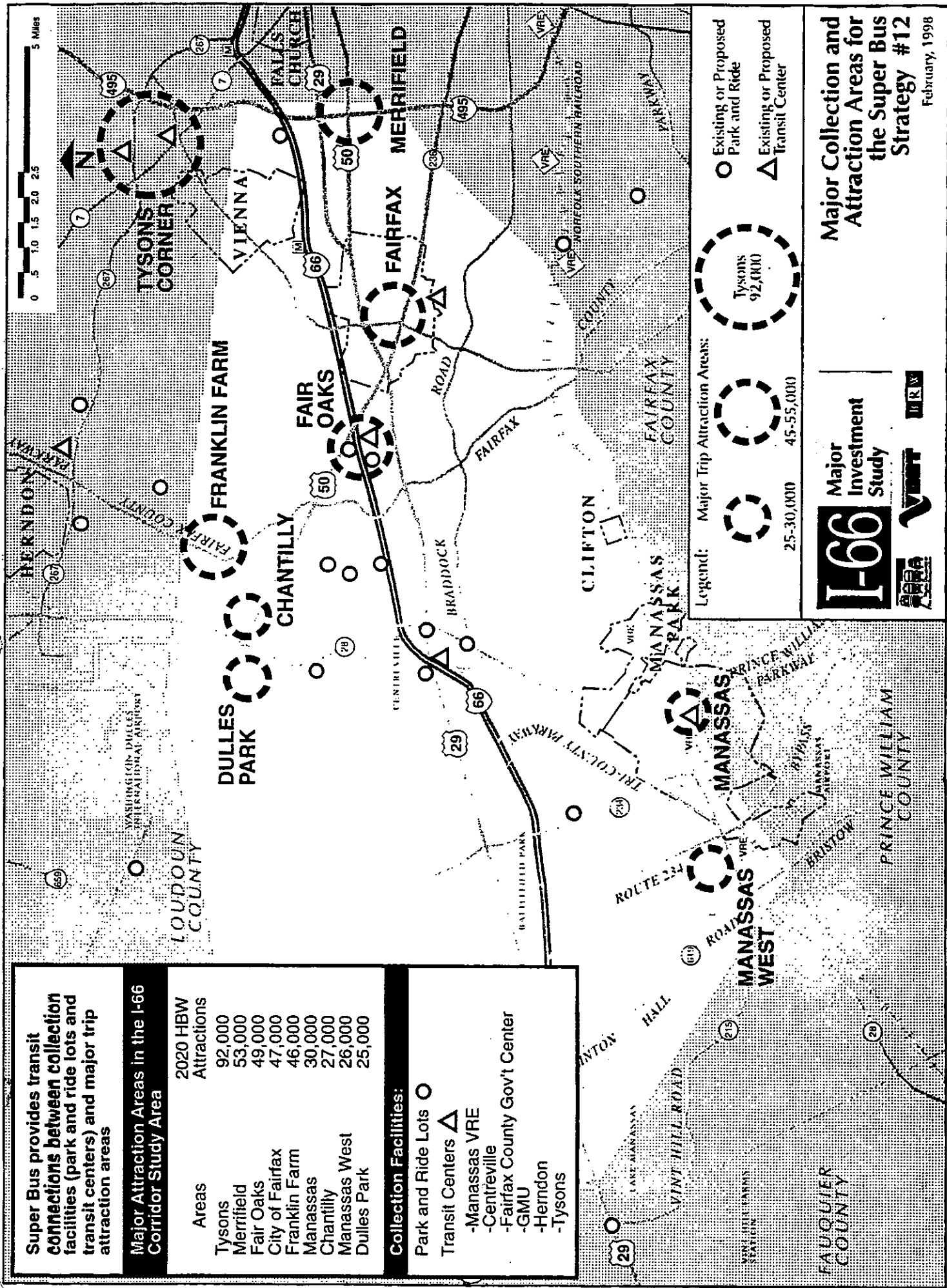
Super Bus provides transit connections between collection facilities (park and ride lots and transit centers) and major trip attraction areas

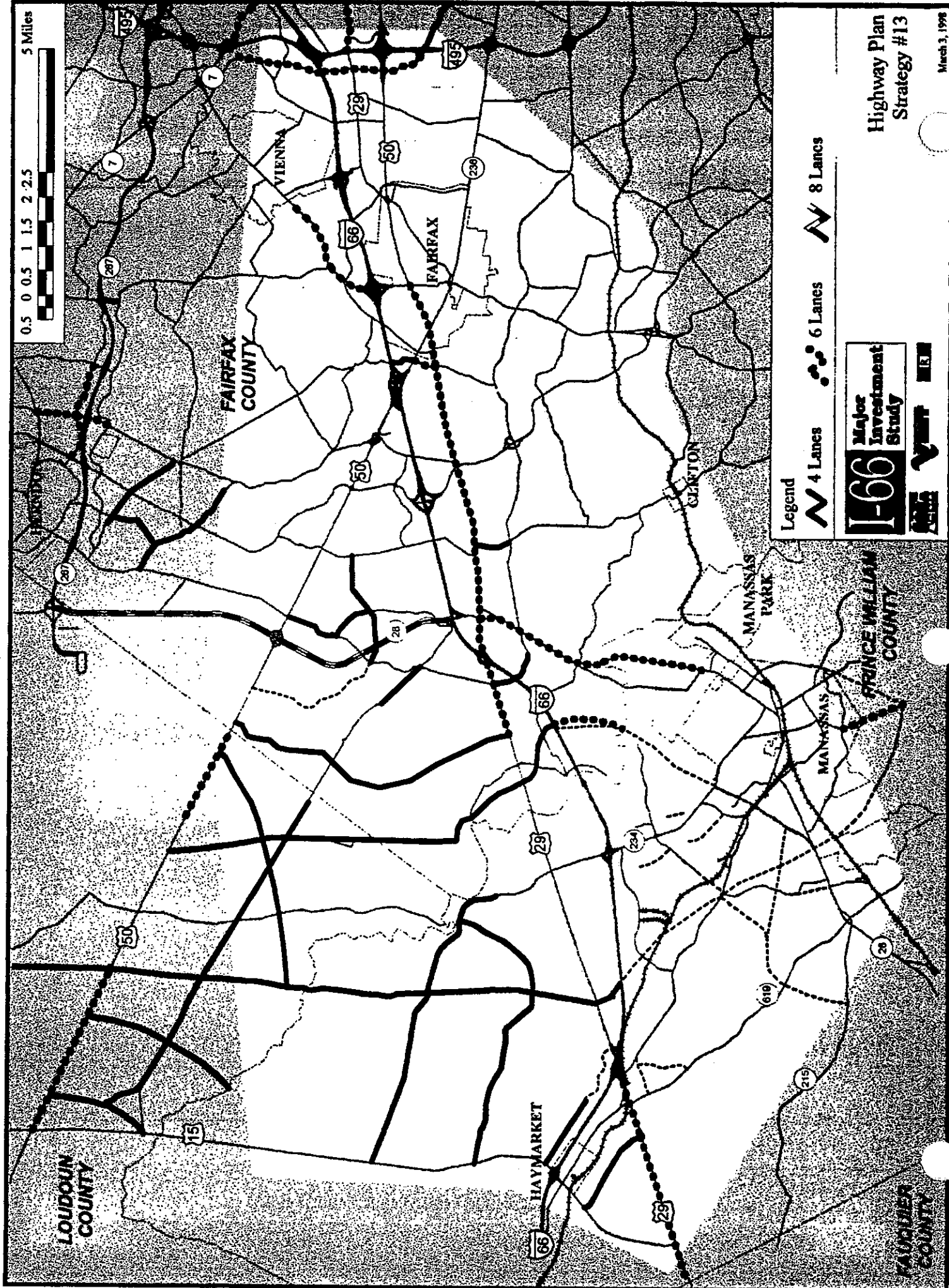
Major Attraction Areas in the I-66 Corridor Study Area

Areas	2020 HBW Attractions
Tysons	92,000
Merrifield	53,000
Fair Oaks	49,000
City of Fairfax	47,000
Franklin Farm	46,000
Manassas	30,000
Chantilly	27,000
Manassas West	26,000
Dulles Park	25,000

Collection Facilities:

- Park and Ride Lots ○
- Transit Centers △
- Manassas VRE
 - Centreville
 - Fairfax County Gov't Center
 - GMU
 - Herndon
 - Tysons





TECHNICAL APPENDIX

The following pages provide detailed descriptions of each of the strategies along with a description of the positive and negative travel demand performance.

The attached pages describe strategies that have changed since the January 29, 1998 Policy Advisory Committee meeting. All other strategies remain the same as the descriptions provided in Attachment #4 of the January 29 meeting materials.

STRATEGY: #5 "G" – HOV REVERSIBLE LANES + METRORAIL TO GAINESVILLE

DESCRIPTION: Strategy #5 "G" combines reversible, barrier-separated HOV 2+ lanes on I-66 with an extension of Metrorail to Gainesville.

The HOV component removes the existing I-66 HOV lanes, adds two barrier-separated, peak-period, peak direction HOV lanes to I-66 from I-495 to Gainesville, and continues HOV in the median of Route 29 to Route 15. The resulting future cross-section along I-66 east of Route 50 shows three general purpose (SOV) lanes and two HOV 2+ lanes during the peak period in the peak direction. This component adds 25.9 lane-miles of barrier-separated HOV.

Metrorail (in the median of I-66) extends from the Vienna/Fairfax-GMU station to a new terminal station near Gainesville. This represents an additional 20.6 route miles of Metrorail, with six new stations assumed; in the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, Centreville, Route 234/NVCC, and Gainesville. Station locations generally conform to the Fairfax County and Prince William County Comprehensive Plans.

POSITIVES: ☐ Adds approximately 3,000 Metrorail riders per day relative to Strategy #5.

NEGATIVES: ☐ Rail extension to Gainesville, as compared to an extension to Centreville in Strategies #5, #8, #9 resulted in 4,000 additional riders per day with an additional approximately 10 miles of trackage and two more stations.
☐ End-of-line activity is substantially less than that observed on other end-of-line Metrorail segments.

RECOMMENDATION: Do not study in Screen 2B due to relatively small increase in rail ridership associated with rail extension to Gainesville.

STRATEGY: #7 – GENERAL PURPOSE LANES + HOV REVERSIBLE LANES + 3 LRT LINES

DESCRIPTION: Strategy #7 combines adding general purpose travel lanes and reversible, barrier-separated HOV lanes to I-66, with a three line LRT system connecting Manassas, Centreville, Dulles Airport, and the Vienna/Fairfax-GMU Metrorail station.

The HOV component removes the existing I-66 HOV lanes, adds to I-66 two barrier-separated, peak-period, peak direction HOV lanes from I-495 to Gainesville, and continues HOV in the median of Route 29 to Route 15. It also adds one general-purpose travel lane in each direction to I-66 from I-495 to Route 50. The I-66 cross-section shows 4 general purpose lanes and two HOV reversible lanes from I-495 to Gainesville, and 5 general purpose (SOV) lanes during off-peak. No improvements would be made to either Route 29 or Route 50. This component adds 25.9 lane-miles of barrier separated HOV.

A three route Light Rail Transit (LRT) network connects: (1) Manassas to the Vienna/Fairfax-GMU Metrorail Station via Route 28 and Route 29; (2) Dulles Airport to the Vienna/Fairfax-GMU Metrorail Station via Route 28, Route 50, the Fairfax County Parkway, and I-66; and (3) the Manassas area and Dulles Airport along Route 28. A high capacity transit service in the north-south alignment along Route 28 generally conforms to the Fairfax County Comprehensive Plan. The LRT element totals 39.7 route miles and 28 LRT stations.

- POSITIVES:**
- ☐ V/C ratio at Screenline 1 from 1.42 to 1.33 (best result of any strategy tested).
 - ☐ Directional lane-miles with V/C > 1.20 drop from 165.4 to 132.2, the lowest value in Screen 2A.
 - ☐ Second lowest value for average daily vehicle hours of delay (111,700 vs. 117,300 for Enhanced Baseline) of any strategy tested, and generates the highest total corridor related transit ridership (78,000 per day).
 - ☐ Tied for the highest number (4,200 per day) of home-based work reverse commute trips to the corridor made by transit with three other Strategies (#2, #4, and #10).
 - ☐ Produced better than average performance relative to improvement in composite travel times for general purpose (611 vs. 675), transit (755 vs. 791), and HOV (432 vs. 522).
- NEGATIVES:**
- ☐ Directional lane-miles with V/C > 1.00 increased some from 470.4 to 480.5.

RECOMMENDATION: Do not study in Screen 2B because of market overlap between Metrorail extension to Centreville and LRT on Route 29. (See **Strategy #9 LRT** for TAC suggestion regarding LRT on Route 50).

STRATEGY: #9 "LRT-G" – GENERAL PURPOSE LANES + 2 LRT LINES; GAINESVILLE TO DULLES, CENTREVILLE TO MANASSAS+ METRORAIL TO CENTREVILLE

DESCRIPTION: Strategy #9 "LRT-G" combines adding general purpose lanes to I-66, Route 29 and Route 50 with an LRT line from Gainesville to Dulles, an LRT line from Centreville to Manassas and a Metro extension to Centreville. All 3 rail lines connect at Centreville.

A general-purpose lane is added to I-66 from I-495 to Route 50 while maintaining the existing single concurrent flow HOV 2+ lane. The I-66 cross-section between I-495 and Route 50 has four general purpose lanes and one concurrent flow HOV 2+lane in the peak period, peak direction, and five general purpose lanes during off-peak periods. Other general purpose travel lane improvements include widening Routes 29 and 50 to six lane facilities with grade separations at most cross street intersections. Improvements to I-66, Route 29 and Route 50 total 50 additional lane-miles of general purpose travel lane capacity.

Metrorail extends in the median of I-66 from the Vienna/Fairfax-GMU station to a new terminal station near Route 28 at Centreville; an additional 10.5 route miles of Metrorail, with four new stations assumed; in the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, and Centreville. Station locations generally conform to the Fairfax County and Prince William County Comprehensive Plans.

Both LRT lines connect to the Metrorail extension at Centreville. From this union with Metrorail, the southern LRT line follows the alignment of the Route 28 Bypass south to Manassas. The northern LRT line begins in Gainesville and proceeds in the median of I-66 to Centreville, then follows Stone Road to Route 28 and on to Dulles Airport. A high capacity transit service along the Route 28 corridor generally conforms to the Fairfax County Comprehensive Plan. This strategy includes 28.3 route-miles of LRT service with 18 LRT stations.

POSITIVES:

NEGATIVES:

- ☐
- ☐ Total regional rail ridership declines by approximately 1,000 trips per day with LRT west of Centreville instead of Metrorail.
- ☐ Gainesville related rail trips are higher with a Metrorail extension between Centreville and Gainesville than with an LRT line.
- ☐ There are approximately 550 transit trips per day between Gainesville and destinations north of Centreville. There are over 5,200 rail trips per day between Gainesville and destination east of Centreville.

RECOMMENDATION: Do not study in Screen 2B because of superior performance of Metrorail extension.

STRATEGY: #9 "LRT-50" – I-66, RT 29 GENERAL PURPOSE LANES + 2 LRT LINES; DULLES TO MANASSAS, DULLES TO FAIR OAKS + METRORAIL TO CENTREVILLE

DESCRIPTION: Strategy #9 "LRT-50" combines adding general purpose lanes to I-66, Route 29 and Route 50 with one LRT line connecting Dulles to Manassas, one LRT line connecting Dulles to Fair Oaks and a Metrorail extension to Centreville. Both LRT lines connect (at different points) to the Metrorail extension.

A general-purpose lane is added to I-66 from I-495 to Route 50 while maintaining the existing concurrent flow HOV 2+ lane. The I-66 cross-section between I-495 and Route 50 has four general purpose lanes and one concurrent flow HOV 2+lane in the peak period, peak direction, and five general purpose lanes during off-peak periods. Other general purpose travel lane improvements include widening Routes 29 and 50 to six lane facilities with grade separations at most cross street intersections. Improvements to I-66, Route 29 and Route 50 total 50 additional lane-miles of general purpose travel lane capacity.

Metrorail extends in the median of I-66 from the Vienna/Fairfax-GMU station to a new terminal station near Route 28 at Centreville; an additional 10.5 route miles of Metrorail, with four new stations assumed; in the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, and Centreville. Station locations generally conform to the Fairfax County and Prince William County Comprehensive Plans.

The north-south LRT line connects to the Metrorail extension at Centreville. From this union with Metrorail, the southern LRT line follows the alignment of the proposed Route 28 Bypass south to the Manassas Airport. The northern LRT line follows Stone Road to Route 28 then to Dulles Airport. A high capacity transit service along the Route 28 corridor generally conforms to the Fairfax County Comprehensive Plan. The northeast LRT line connects with Metrorail at Fair Oaks and with the north-south LRT line at Chantilly. This strategy includes 25.1 route-miles of LRT service with 19 LRT stations.

POSITIVES: ☐ **N/A. This is a new strategy.**

NEGATIVES: ☐ **N/A. This is a new strategy.**

RECOMMENDATION: Do not study in Screen 2B.



Corridor Development Study

Warrenton To Centreville, Virginia

March 4, 1998



ROUTE 29 CORRIDOR DEVELOPMENT STUDY

Warrenton to Centreville, Virginia

Prepared for:

The Commonwealth of Virginia
Department of Rail and Public Transportation
and
Department of Transportation

Prepared by:

BRW, Inc.

March 4, 1998

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SUMMARY

STUDY PURPOSE

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) identified the U.S. Route 29 corridor between Washington, D.C. and Greensboro, North Carolina as a "high priority" corridor within the context of the National Highway System. Since that time, the Virginia Department of Transportation has been engaged in the conduct of several corridor development studies over the length of the Route 29 corridor in the Commonwealth. The geographic scope of the portion of Route 29 which was the subject of this Corridor Development Study encompassed the area from the Town of Warrenton in Fauquier County to the Centreville area of Fairfax County. This Study was also influenced by the Manassas National Battlefield Park Amendments of 1988, which directed the Secretary of the Interior, in cooperation with the Virginia Department of Transportation and the affected local jurisdictions, to investigate the potential for the relocation of U.S. Route 29 and State Route 234 out of the boundaries of the National Battlefield Park. Because of this amendment, the focus of this study is the northern portion of the corridor.

The stated purpose of this Route 29 Corridor Development Study was to address two basic questions:

1. Does the travel demand on Route 29 between Warrenton and Centreville warrant consideration of a bypass route?
2. If improvements such as a bypass route are warranted, are there viable alignment options that would warrant further Study?

As documented in the Study Final Report, the answer to both of these questions is "Yes". A summary of the major findings and recommendations of the Study are presented below:

Does Travel Demand Warrant Consideration of a Bypass Route?

- Existing (1996) traffic volumes on Route 29 range from approximately 35,000 to 40,000 vehicles per day both east and west of the Manassas National Battlefield Park. Within the Park itself, traffic volumes on Route 29 are approximately 9,000 to 10,000 vehicles per day. Based upon anecdotal information from the National Park Service, the recent completion of improvements to I-66 in the vicinity of the Park have reduced traffic volumes on Route 29 through the Park itself from the levels observed in 1996.
- Future traffic volumes along the Route 29 corridor were forecast for the year 2020 under three alternative scenarios: (1) completion of the 2020 Constrained Long Range Transportation Plan (CLRP) for the Metropolitan Washington Region, which assumed that both Route 29 and Route 234 through the Park would remain open for through traffic with no change in roadway capacity (i.e., the "no-build" condition for the Route 29 corridor); (2) a conceptual alignment North Bypass of the Park, departing from existing Route 29 west of

Centreville and rejoining existing Route 29 in the Buckland area; and (3) the designation of Route 29 along existing I-66 between Centreville and Gainesville. The latter two options assumed that existing Route 29 and Route 234 would be discontinuous through the Park.

- Under the "no-build" scenario, traffic volumes on Route 29 in the year 2020 were projected to range from approximately 36,000 to 41,000 vehicles per day east of the Park and from approximately 58,000 to 69,000 vehicles per day west of the Park. Within the Park itself, traffic volumes on Route 29 were forecast to increase to approximately 13,000 to 20,000 vehicles per day.
- The construction of a North Bypass was projected to result in traffic volumes in the year 2020 on Route 29 to the east and west of the Park in the range of approximately 39,000 to 72,000 vehicles per day. On the conceptual bypass alignment north of the Park, traffic volumes were forecast to range from approximately 29,000 vehicles per day to a maximum of 46,000 vehicles per day.
- The designation of Route 29 along the portion of I-66 between Centreville and Gainesville was projected to result in traffic volumes in the year 2020 on Route 29 east and west of the Park ranging from approximately 33,000 to 68,000 vehicles per day. If Route 29 were to be closed to through traffic in the Park, traffic volumes on I-66 west of Route 234 were forecast to be approximately 129,000 vehicles per day compared to 119,000 vehicles per day under the CLRP alternative and 118,000 vehicles per day under the North Bypass alternative. Both the CLRP and North Bypass alternatives assume the addition of one HOV lane and one general purpose lane to I-66 in this area consistent with the CLRP. By comparison, the existing (1996) traffic volume on this section of I-66 is approximately 55,000 vehicles per day.

The magnitude of the forecast traffic volumes in the year 2020 along this portion of the Route 29 corridor, and the anticipated degree of change from present day volumes, warrants further consideration of improvements in the corridor.

Are There Viable Alignment Options That Warrant Further Study?

Candidate alignments were defined to represent four general options; a north bypass of Manassas National Battlefield Park, a south bypass of the park, designation of Route 29 on I-66 and widening along the existing Route 29 alignment.

Natural and cultural resources along each of the candidate alignments were inventoried. Resources inventoried include community resources, building, parkland, historic sites and battlefields, wetlands, floodplains, steep slopes, and hazardous material sites. Potential impacts were defined by quantifying resources that fall within each 1,000 foot wide corridor alignment.

Based upon the results of the analysis conducted, it is recommended that, at a minimum, the following four general alignment alternatives be studied in more detail if the Department decides to proceed with the next phase of the Route 29 Corridor Development Study:

- "No-Build" - Consistent with the requirements of the National Environmental Policy Act of 1971 (NEPA), it is recommended that the "no-build" alternative be carried forward for further analysis. Under this alternative, it is assumed that both Route 29 and Route 234 through the Park would remain open for through traffic with no significant change in roadway capacity. In addition, this alternative assumes that all elements of the current CLRP would be implemented by the year 2020.
- Long North Bypass - Under this alternative, a "long" north bypass of the Manassas National Battlefield Park would be constructed. This bypass route would follow the Tri-County Parkway alignment north from Route 29 east of the Park to an area north of the Park, where it would turn west and follow a new location alignment on the north side of Bull Run to an intersection with Route 15 just north of the Route 15 / I-66 interchange near Haymarket. This long north bypass route would then follow Route 15 to just north of the existing Route 15 / Route 29 intersection, where a north side bypass of the Buckland Historic District would be constructed, with the alignment rejoining existing Route 29 west of the Buckland Historic District at Vint Hill Road. From west of Buckland to Warrenton, improvements to the Route 29 corridor would generally follow the existing alignment of Route 29, with widening typically along the north side. Under this alternative, both existing Route 29 and existing Route 234 are assumed to be discontinuous through the Park.
- Short North Bypass - Under this alternative, a "short" north bypass of the Manassas National Battlefield Park would be constructed. This bypass route would follow the Tri-County Parkway alignment north from Route 29 east of the Park to an area north of the Park, where it would turn west and follow a new location alignment crossing both Bull Run and Catharpin Run past Stony Ridge to a junction with the alignment of the proposed Route 234 Bypass north of I-66. The route would then turn south along the Route 234 Bypass alignment to rejoin existing Route 29 west of the Park. From there, improvements to the Route 29 corridor would be provided between the Gainesville area and Warrenton, generally following the existing Route 29 alignment, with widening typically along the north side. Under this alternative, both existing Route 29 and existing Route 234 are assumed to be discontinuous through the Park.
- Route 29 Designation on I-66 - Under this alternative, Route 29 would be designated on I-66 between Centreville and Gainesville. Improvements to the existing Route 29 corridor between Gainesville and Warrenton would be made generally along the existing Route 29 alignment. Under this alternative, both existing Route 29 and existing Route 234 are assumed to be discontinuous through the Park.

While all of these alternatives, including the "No-Build" would have some degree of impact upon the natural and man-made environment of the study area, none of the identified impacts are of such a magnitude as to make any of the suggested alternatives not viable at the level of detail of this study. It should also be noted that other new location alignment options and/or improvement to existing facility options in addition to those described above may be identified during the conduct of subsequent more detailed engineering and environmental studies.

STUDY OVERSIGHT AND PUBLIC INVOLVEMENT

The study was conducted under the oversight of the I-66 Corridor MIS Technical and Policy Advisory Committees. The committees were composed of representatives of affected local, regional, state and federal units of government. The Technical Advisory Committee was established to help guide the study to ensure that it addressed the full range of local and regional concerns. This committee was the primary formal linkage between the Study team and interested parties. The Policy Advisory Committee was established to provide guidance to the Virginia Department of Transportation (VDOT) and the Virginia Department of Rail and Public Transportation (DRPT) on decisions regarding Route 29.

During the course of the Route 29 Corridor Development Study, an ongoing program of public and agency involvement was conducted. These activities included meetings with a broad spectrum of interests, including the National Park Service of the U.S. Department of the Interior, and senior staff and local elected officials representing Fairfax, Fauquier, Loudoun, and Prince William Counties. Two well-publicized and well-attended public information meetings were held, one in January 1997 and the other in January 1998 to provide opportunities for public input into the study process. The attendance at each of these public information meetings was in excess of 200 persons. As a result of these public meetings, approximately 1,000 formal written and verbal comments were received and tabulated.

1.0 INTRODUCTION

1.1 STUDY PURPOSE

This Route 29 Corridor Development Study analyzes Route 29 between Warrenton and Centreville, as a part of the I-66 Corridor Major Investment Study (MIS), to determine:

- Does the travel demand on Route 29 between Warrenton and Centreville warrant consideration of a bypass route?
- If a bypass route is warranted, are there viable alignment options that would warrant further study?

A goal of the study is to minimize traffic through the Manassas National Battlefield Park. The study evaluates the feasibility of alternative conceptual alignments to bypass the park. The Route 29 study area includes portions of Fairfax, Prince William, Fauquier and Loudoun Counties.

1.2 BACKGROUND

The study is being prepared primarily in response to the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), in which Route 29 through the state of Virginia was identified as one of twenty-one High Priority Corridors in the National Highway System. The High Priority Corridor designation recognized the importance of Route 29 as a link in the National Highway System providing linkage to areas not served by the interstate system. As part of the designation the Commonwealth of Virginia was authorized to prepare long range feasibility studies for the corridor. In response to the ISTEA priority designation, the Virginia Department of Transportation (VDOT) is analyzing the Route 29 Corridor in Virginia in three segments:

- Warrenton to Centreville
- Charlottesville to Warrenton
- Charlottesville to the south state line

The study also addresses Public law 100-647, the Manassas National Battlefield Park Amendments of 1988. Route 29 traverses the Manassas National Battlefield Park. The Act requires a study of the relocation of Route 29 and Route 234 in the vicinity of the Manassas National Battlefield Park to allow for closure of the existing routes through the park. The Act states, "The Secretary of the Interior, in consultation and consensus with the Commonwealth of Virginia, the Federal Highway Administration and Prince William County, shall conduct a study of the relocation of highways (known as routes 29 and 234) in, and in the vicinity of, the Manassas National Battlefield Park. ...The study shall specifically consider and develop plans for the closing of those public highways.....and shall include analysis of.....means to provide alternative routes for traffic now transecting the park. The Secretary shall provide for extensive public involvement in the preparation of the study."

The study was to have been completed within one year. The Act authorized \$30 million for the study and project construction, and required 25 percent state/local matching funds. The money was not appropriated.

1.3 STUDY APPROACH

Alternative alignment options for Route 29 were identified from previous studies, county plans, input from the public and local governmental officials, and conceptual engineering analysis. The scope of this study is to define alignment options in terms of a 1,000 foot corridor.

The following factors were used in the evaluation of alternative conceptual alignments:

- Concerns and opinions of the public, local government jurisdictions and public agencies.
- Transportation system operations.
- Environmental screening including preliminary identification of potential impacts on existing development, wetlands, historic resources, hazardous materials sites and community resources.

The products of this study include the following:

- Identification of alternative alignment options for Route 29 between Centreville and Warrenton.
- Preliminary identification of the community, cultural, historic and environmental resources that exist in the Route 29 area.
- Documentation of coordination with, and comments of, governmental officials, agency representatives and the general public.
- Evaluation of the relative impacts of Route 29 improvement and alternative alignment options.
- Forecast of future traffic volumes on existing Route 29 and a potential bypass route.
- Identification of the most promising Route 29 improvement or alignment options for further study.

This study is the first step in the corridor development process. The results will be incorporated into the I-66 Corridor MIS, and additional detailed design studies and environmental evaluations will be conducted based on the results of this alternative conceptual alignments study. The conclusion of this first step will not recommend a preferred alignment. Subsequent studies will select a preferred alternative for the corridor and will be made available to the public, local governments and public agencies for review and comment.

1.4 OTHER CURRENT STUDIES

Other transportation studies in the area that could potentially affect transportation facilities in the Route 29 corridor include:

- Western Transportation Corridor Study - This study evaluated options for a north-south roadway west of the Battlefield. The study recommended a new roadway following the Route 234 Bypass alignment in the vicinity of the Battlefield. Text of the recommendations of the Western Transportation Corridor Advisory Committee is included in Appendix A.
- Manassas Railroad Alignment Improvement Study - This study evaluated options to relocate the Norfolk Southern Railroad in the vicinity of Gainesville. The study has not identified a preferred realignment alternative.
- Manassas National Park General Management Plan - The National Park Service is in the process of revising the long-range plan for the park.

2.0 CANDIDATE ROADWAY ALIGNMENTS

Several alternative corridor alignment concepts were developed to address congestion and safety issues throughout the entire corridor from Centreville to Warrenton, as well as several potential alignments for relocating Route 29 out of the Manassas National Battlefield Park. These alignment options are illustrated in Figure 1 and include the following:

No-build. Route 29 would remain on its existing alignment, with little or no improvement.

Widen Existing Route 29. Route 29 would be widened at selected locations along its existing alignment.

Relocate Route 29 on I-66. Route 29 would "share the roadway" with I-66 from Centreville to Gainesville.

South Bypass. A frontage road either north or south of I-66 (but south of the battlefield) would be constructed and designated as Route 29.

North Bypass. A new roadway north of the battlefield park would be constructed and designated as Route 29.

All alternative concepts--except the no-build option and widening Route 29--would likely close Route 29 to through traffic within Battlefield Park. However, this decision is dependent on the alignment alternative selected, subsequent studies, public input, and the desires of the National Park Service.

Every alignment corridor is defined with a 1,000 foot width to be consistent with the level of detail for this initial phase of work and to allow flexibility in the location of any roadway facility to meet construction requirements and minimize adjacency environmental impacts.

As previously stated the source of the candidate roadway alignments include:

- county plans
- previous bypass studies
- input from public
- input from local governmental officials
- conceptual engineering analysis

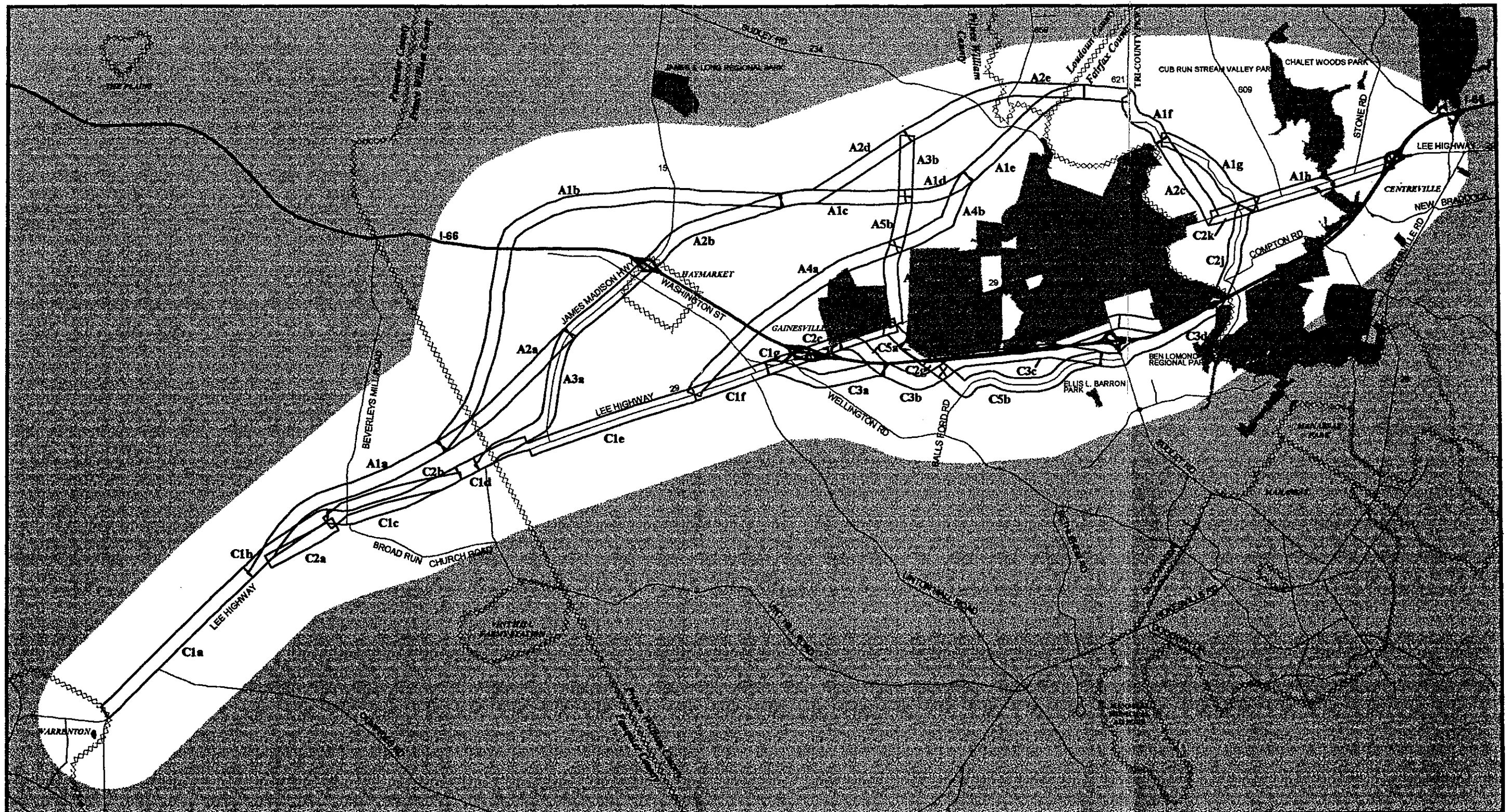


Figure 1

Alignment Options



Corridor
Development
Study
Warrenton To Centreville, Virginia



Data Sources:
Prince William County Office of Mapping & Information Resources
Fairfax County Department of Information Technology, GIS and Mapping Services
U.S. Census Bureau TIGER Line Files (Fauquier County)
Virginia Department of Transportation, State Highway Map
Fairfax County Comprehensive Land Use Plan
Prince William County Comprehensive Plan
ADC Map Books



3.0 CORRIDOR RESOURCES

Natural and cultural resources along each of the alternative alignments have been inventoried. Resources inventoried include community resources, buildings, parks, historic sites and battlefields, wetlands, floodplains, steep slopes, and hazardous materials sites. Specific resources and sources of information are described below.

- Community resources are inventoried by count and number of acres. Included are cemeteries, churches, schools, fire/police facilities, post offices, and other. These resources were identified from ADC maps and GIS data supplied by Fairfax and Prince William Counties.
- Historic resources represent a review of the Virginia Department of Historic Resources non-archaeological inventory files and the Civil War Sites Advisory Commission Maps (also accessible at the VDHR). Also consulted were the most recent listings of Virginia Landmarks Register and National Register properties (updated to July 1997) and "register evaluation sheets," both located at the VDHR. The battlefield boundaries for the first and second Battles of Manassas reflect the most recent (1997) acquisitions of the National Park Service. The inventoried historic properties list includes all sites located within or adjacent to the 1,000 foot corridor boundaries. All properties identified in the VDHR files are included whether or not evaluation for eligibility to the National Register has been completed. Each property's evaluation status is noted, whether listed or eligible for the National Register, determined not eligible for the National Register, or not evaluated. The list (see Appendix C) enumerates individual properties within historic districts for a more accurate count of properties within each corridor alternative. The contributing status of the district property is also designated on the list.
- Parks include all local, regional, state and national parks including the Conway Robinson Memorial State Forest, Bull Run Park and the Manassas National Battlefield Park. Park resources were identified from Prince William and Fairfax Counties GIS data bases and the Fauquier County Comprehensive Plan.
- Floodplains as depicted are based on data from the FEMA flood insurance maps.
- Wetlands shown reflect the national wetlands inventory data. Included are eight variations of the palustrine soil class. Wetlands were obtained from National Wetlands Inventory maps.
- Hazardous material location sites are based on data provided by the Virginia Department of Environmental Quality, the federal Environmental Protection Agency and the Emergency Response Notification System (ERNS). Data bases include underground storage tanks, leaking underground storage tanks, RCRA "large generators" that generate over 1,000 kg./month of non-acutely hazardous waste or 1 kg./month of acutely hazardous waste, and RCRA "small generators" that generate less than 1000 kg./month of non-acutely hazardous waste or less than 1 kg./month of acutely hazardous waste.

- Steep slopes are identified from topographic maps. Terrain with slopes greater than 1:6 are graded steep. Slopes greater than 1:4 are graded excessively steep. Topographic information was obtained from USGS maps and supplemented with topographic contour maps from Fauquier County.
- Developed lands were identified by counting structures from digital orthophotographs produced from aerial photography flown in March 1995 with ground resolution of 1.0 meter.
- These assembled natural and cultural resource data bases serve as the basis for evaluation of each of the several corridor alternative alignments.

Maps of these natural and cultural resources are of a scale that is too large to allow duplication in this report.

4.0 EVALUATION OF ALIGNMENT ALTERNATIVES

Alignment alternatives are analyzed and evaluated for potential impacts on the inventoried natural and cultural resources. The objective of these evaluations is to quantify the magnitude of the potential impacts of each alignment as one factor in the selection of alignment options for more detailed study.

To facilitate this evaluation each corridor alignment alternative is divided into small, relatively homogenous segments. These segments are identified as "A1a", "C2b", etc. as shown on Figures 2 through 9.

The environmental data for buildings, community resources, floodplains, wetlands, hazardous materials, steep slopes, historic resources and parks are shown in Table 1. The data is shown by actual count or number of acres for each feature for each alignment segment. Accompanying each cell of environmental data is a cell showing the linear per mile rate of impact for each environmental feature in each segment. For example, for segment A1a, column 3 shows 35 buildings, and column 4 shows the rate: 10.6 buildings per mile. Per mile rates are shown for each segment for all features.

For purposes of analysis in finding alignments causing the least environmental impact, the rates for each environmental feature were segregated into five groups: those with no impact and four quartile groups showing relative levels of impact. The quartiles for each environmental feature are shown at the bottom of Table 1. Using this data, maps were prepared for each environmental feature showing segments causing (1) no impact, and segments causing a (2) low, (3) medium, (4) high, or (5) very high impact.

It should be noted that the evaluation process identifies all environmental features within the defined 1,000 foot wide corridors as potentially impacted. Facility design refinements could avoid some of the potential impacts identified.

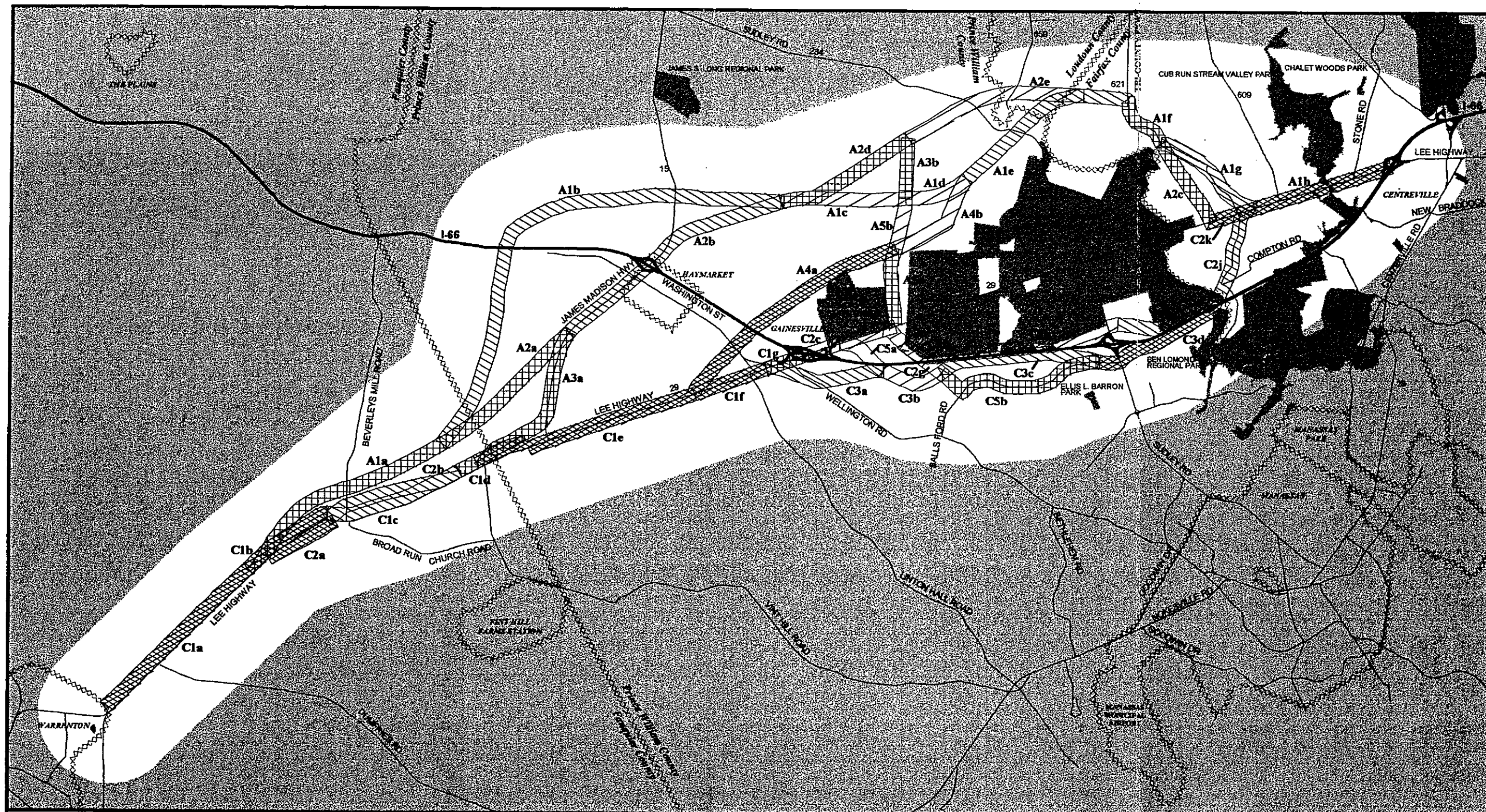
4.1 BUILDINGS

Buildings that could potentially be impacted within the 1,000 foot wide alignment corridors include all non-public residential, commercial, retail and industrial buildings. The greatest impacts occur in the developed urban areas. The segment causing the biggest impact is A4a, which could potentially impact 120 buildings. The rate for segment A4a is 33.3 buildings per mile. The highest rate, however, is 53.9 buildings per mile in segment C1b, which could impact 70 buildings in a space of only 1.3 miles. Figure 2 illustrates the relative impacts on buildings for all segments. A combination of segments in the north bypass could have the least impact to existing buildings. The optimum arrangement could potentially impact 128 buildings compared to the optimum arrangement of segments in the south bypass which could potentially impact 196 buildings. The north bypass would be the preferred alignment to minimize potential impacts on buildings.

Segment A4a is a prime candidate for removal from further consideration. It could potentially impact 120 buildings plus many more buildings in other segments.

TABLE 1

Segment	Miles long	Buildings		Community Resources Number	per mile	Floodplains		Wetlands acres	per mile	Hazardous Materials		Steep Slopes		Historic Resources		Parklands	
		Bldgs.	per mile			acres	per mile			Sites	per mile	Linear feet	per mile	Buttild acres	Sites	per mile	acres
A1A	3.3	35	10.61	1	0.30	10	3.03	3	0.91			3000	909.09	150	45.45	1	0.30
A1B	7.1	48	6.76	3	0.42	78	10.99	7	0.99			2300	323.94			10	1.41
A1C	1.7	5	2.94			22	12.94	1	0.59			1800	1058.82				
A1D	0.9	2	2.22			16	17.78					1400	1555.56				
A1E	2.7	12	4.44			35	12.95	1	0.37			800	296.30			1	0.37
A1F	0.9	14	15.56			22	24.44	1	1.11								
A1G	1.7	14	8.24			1	0.59	4	2.35								
A1H	2	99	49.50			22	11.00	3	1.50					4	1.67	1	0.50
A2A	2.4	33	13.75	1	0.42	16	6.67	1	0.42			1500	1153.85				
A2B	3.5	16	4.57			32	9.14	5	1.43					15	11.54		
A2C	1.3	12	9.23			3	2.31	4	3.08								
A2D	2	17	8.50	2		23	11.50			1	0.50	800	400.00				
A2E	2.6	11	4.23			17	6.54	1	0.38								
A3A	2.4	40	16.67	2	0.77	13	5.42					2200	916.67	116	48.33	3	1.25
A3B	0.8	7	8.75					1	1.25			2600	3250.00			1	1.25
A4A	3.6	120	33.33			85	23.61	2	0.56			2300	636.89			1	0.28
A4B	1.5	5	3.33			3	2.00					1000	666.67	78	52.00		
A5A	1.1	11	10.00			2	1.82					3000	4285.71			3	2.73
A5B	0.7	3	4.29			23	32.86	1	1.43								
C1A	2.8	86	30.71	1	0.36	56	20.00	2	0.71			1700	1307.69	246	87.86		
C1B	1.3	70	53.85	1	0.77	14	10.77							233	116.50	2	1.00
C1C	2	12	6.00			32	16.00	1	0.50					33	110.00		
C1D	0.3	5	16.67			10	33.33										
C1E	2.4	56	23.33	3	1.25	24	10.00			6	2.50	1100	458.33	134	55.83	9	3.75
C1F	1.1	39	35.45			12	10.91	19	1.73	10	9.09					10	9.09
C1G	0.6	9	15.00							18	30.00						
C1H	1.7																
C1I	2.6																
C1J	4.8																
C2A	1.1	50	45.45			7	6.36							130	118.18		
C2B	2	12	6.00	1	0.5	19	9.50	1	0.50					179	89.50	2	1.00
C2C	0.5	1	2.00			7	14.00										
C2D	0.8	1	1.25					1	1.25							1	1.25
C2E	0.4	1	2.50					1	2.50					5	12.50	1	2.50
C2F	0.4	1	2.50											28	70.00		15.00
C2G	0.3													11	36.67		3.33
C2H	3.1	4	1.29	1	0.32	7	2.26	2	0.65					362	116.77	1	0.32
C2I	1.5	8	5.33	1	0.67	35	23.33	5	3.33					184	122.67	2	1.33
C2J	1.3	9	6.92	1	0.77	10	7.69	5	3.85					5	3.65		4.62
C2K	0.7	18	22.86					1	1.43					7	10.00		
C3A	1.7	14	8.24							6	3.53						
C3B	0.9	2	2.22														
C3C	2.3	12	5.22			1	0.43	1	0.43					258	112.17		
C3D	2	70	35.00			50	25.00	4	2.00	7	3.50			189	94.50	1	0.50
C5A	0.7					1	1.43									19	9.50
C5B	2.5	26	10.40					2	0.80	11	4.40	800	320.00	122	48.80	1	0.40
TOTAL		1008	555.12	16	6.55	708	386.61	62.9	36.04	66	56.70	26300	17541.52	2654	3034.52	55	32.31
0-25% Or	0.9	5	4.29	1	0.39	7	5.42	1.00	0.57	1.00	0.81	1050.00	429.17	18.25	38.86	1.00	0.45
25-50% Or	1.7	12	8.24	1	0.50	16	10.77	1.90	1.11	6.00	2.50	1700.00	909.09	126	62.92	1.00	1.25
50-75 % Or	2.4	35	16.67	1.5	0.77	24	16.00	3.50	1.61	8.50	3.97	2300.00	1230.77	182.75	111.63	3.00	1.95
75-100% Or	7.1	120	53.85	3	1.25	85	33.33	7	3.85	18	30	3000	4285.71	362	126.92	10.00	9.09
																208	67.10
																6	4.62
																8	9.50
																19	23.75
																6	8.57



**Corridor
Development
Study**
Warrenton To Centreville, Virginia



Buildings Segment Impacts

- No Impact
- Low
- Medium
- High
- Very High

Notes

The greatest impact on existing buildings is in segment A4a where 120 buildings could potentially be impacted.

Figure 2

Data Sources:
 Prince William County Office of Mapping & Information Resources
 Fairfax County Department of Information Technology, GIS and Mapping Services
 U.S. Census Bureau TIGER Line Files (Fauquier County)
 Virginia Department of Transportation, State Highway Map
 Fairfax County Comprehensive Land Use Plan
 Prince William County Comprehensive Plan
 ADC Map Books

1 0 1 2 Miles N

4.2 COMMUNITY RESOURCES

Community resources inventoried for this analysis include churches, cemeteries, schools, fire/police facilities, post offices, and other resources such as state offices, golf courses and pavilions. Segment C1e, which follows the existing Route 29 roadway, would cause the greatest potential impact on community resources. In this segment the Gainesville Post Office, the Virginia Department of Transportation Area Headquarters and the Mount Pleasant Church could potentially be impacted. The impact rate would be 1.25 community resources per mile, the highest rate for all segments. The map shown in Figure 3 illustrates the level of impact for each of the alignment segments. Potential impacts are generally greater along alignments on the south bypass, thus making the north bypass preferable for least impact on community resources.

The prime segment candidate for removal from further consideration is segment C1e which could potentially impact three community resources as cited above. By way of comparison, there are only two community resources that could potentially be impacted in all segments in the entire north bypass alignment. However, segment A2e could potentially impact Bull Run Quarry.

4.3 FLOODPLAINS

Floodplains of the stream and river basins include the one hundred year floodplains as depicted on flood insurance maps of the Federal Emergency Management Agency. Segment A4a, which runs northeast to southwest and lies between Haymarket and Gainesville, could potentially impact the highest number of acres (85) of floodplains per segment. Its rate is 23.6 acres per mile. Segment C1d, a much shorter segment, could impact 17 acres, but has a higher impact rate of 33.3 acres per mile. The map shown in Figure 4 illustrates the various levels of impact for all of the segments. Varying levels of impact are found in most combinations of segments, however, more segments with fewer impacts are found in the south bypass, making it the preferable alignment for least impacts to floodplains.

Segment A4a is the floodplain prime segment candidate for removal from further consideration. It could impact 85 acres of floodplains. Segment A1b runs a close second as a candidate. It could impact 78 acres of floodplains.

4.4 WETLANDS

Wetlands comprise the other component of water resources analyzed for potential impacts. The wetlands inventory is based on the ten classifications of the national wetlands inventory (NWI). The segment with the most acres of wetlands potentially being impacted is A1b, a segment in the north bypass that extends west of Catharpin Creek, then turns south across I-66 and continues to a point beyond Broad Run River. The per mile rate for the segment is .99. However, the greatest concentration of potential impacts on wetlands occurs in the combination of segments C2i and C2j located south of Route 29 in the vicinity of Bull Run River. In the 2.8 miles for these segments, 10 acres could be impacted, thus effecting a rate of 3.6 acres per mile. The map on Figure 5 shows the distribution of the various levels of impact on wetlands for each segment. Segments impacting

wetlands are found along both the north bypass and south bypass. However, there is 12 percent less impact on wetlands among the segments in the south bypass than in the north bypass, making it the preferable location for least potential impacts on wetlands.

Segment A1b potentially impacts seven acres, the largest number of acres impacted by any one segment. However, its rate is only .99 compared to segment C2j which could impact 5 acres and has an impact rate of 3.85. There are two additional segments that could impact 5 acres. There is no clear outstanding candidate for removal from further consideration.

4.5 HAZARDOUS MATERIALS

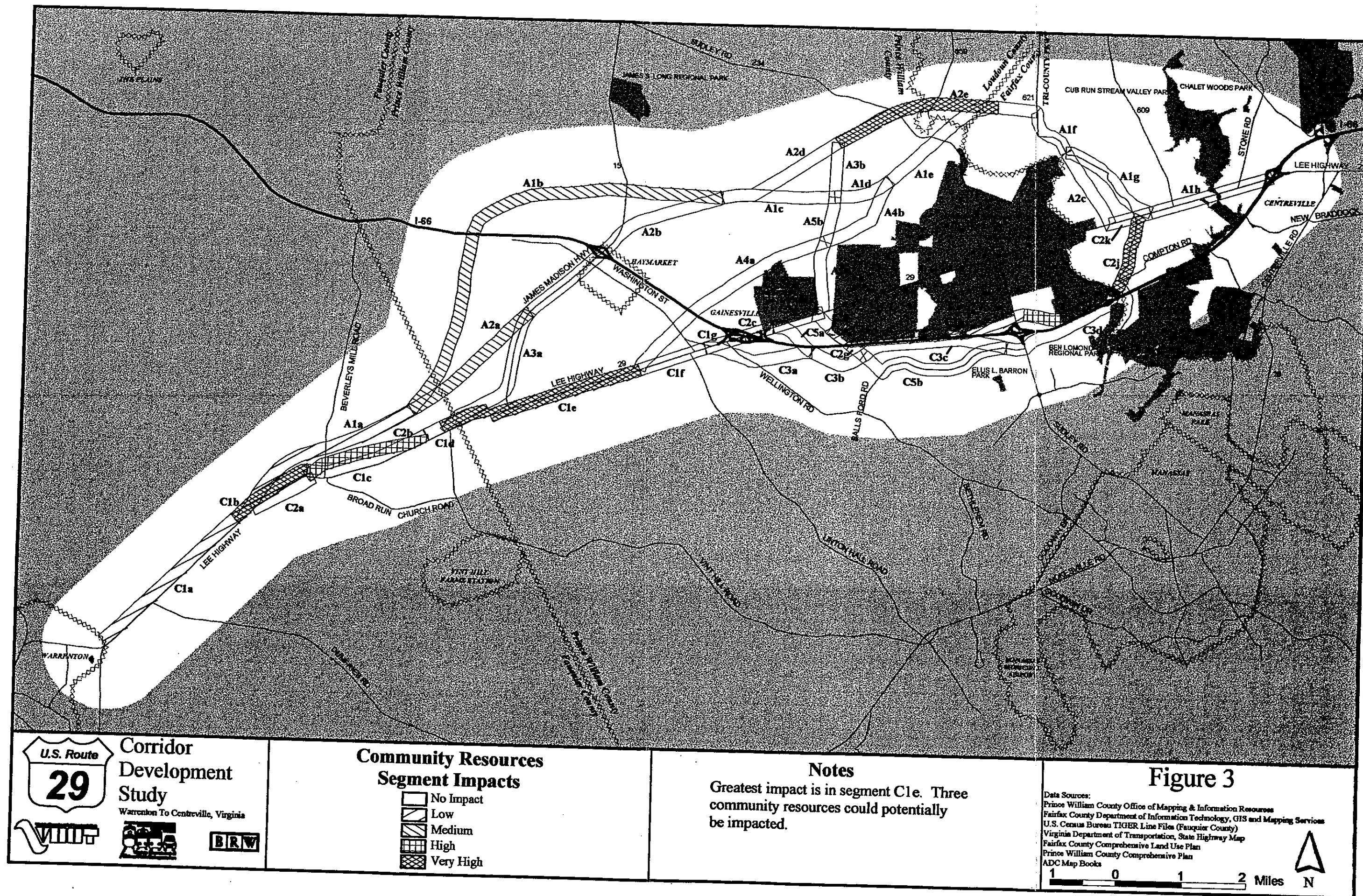
The hazardous materials sites inventoried include underground storage tanks, leaking underground storage tanks and both small and large RCRA generators of hazardous wastes. Detailed identification listings of each site are identified in Appendix B. Over half (34) of all the potentially impacted hazardous sites are found in segments C1e, C1f and C1g. Among these, segment C1g ranks highest with 18 sites in a relatively short 0.6 mile, which gives it the highest rate of 30.0, compared to the next highest rate of 9.1. The three high impact segments are in the south bypass alignments. Hazardous waste site impacts in the north bypass are much less severe. The map shown in Figure 6 illustrates the distribution of segments causing various levels of potential impact. The south bypass alignment causes the least potential impacts to hazardous materials sites.

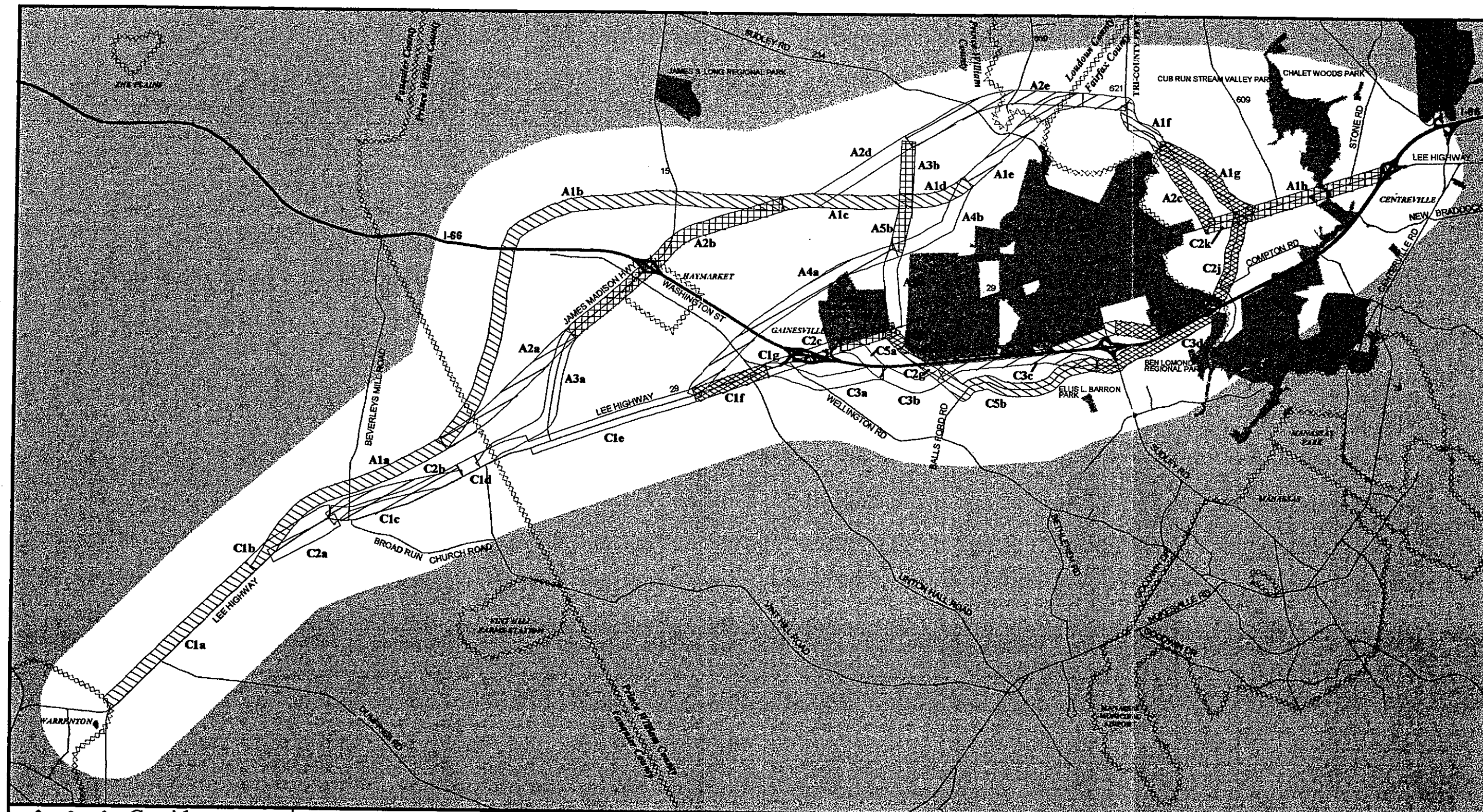
Contiguous segments C1e, C1f and C1g contain over half of the 66 sites in all segments. These segments are prime candidates for removal from further consideration based on potential impacts on hazardous waste sites.

4.6 STEEP SLOPES

Steep slopes are characterized by changes in elevation of terrain in relative short horizontal distances thus necessitating special treatment with the movement of earth or the construction of embankments or bridges to achieve acceptable roadway standards. Segments showing the largest occurrence of steep slopes are contiguous segments A5b and A3b. These segments lie north of Gainesville, cross the Little Bull Run River, and are parallel with Pageland Lane. The two segments are relatively short, covering only 1 ½ miles, but include 5,600 linear feet of steep slopes and require two bridges. Most other steep slopes are also found in segments in the north bypass area. Any one of several south bypass combination of segments would have significantly less encounter with steep slopes. Figure 7 shows the relative impact of all segments on steep slopes.

Segments A5b and A3b are prime candidates for removal from further consideration for steep slope impact.





Corridor Development Study
Warrenton To Centreville, Virginia



Wetlands Segment Impacts

- No Impact
- Low
- Medium
- High
- Very High

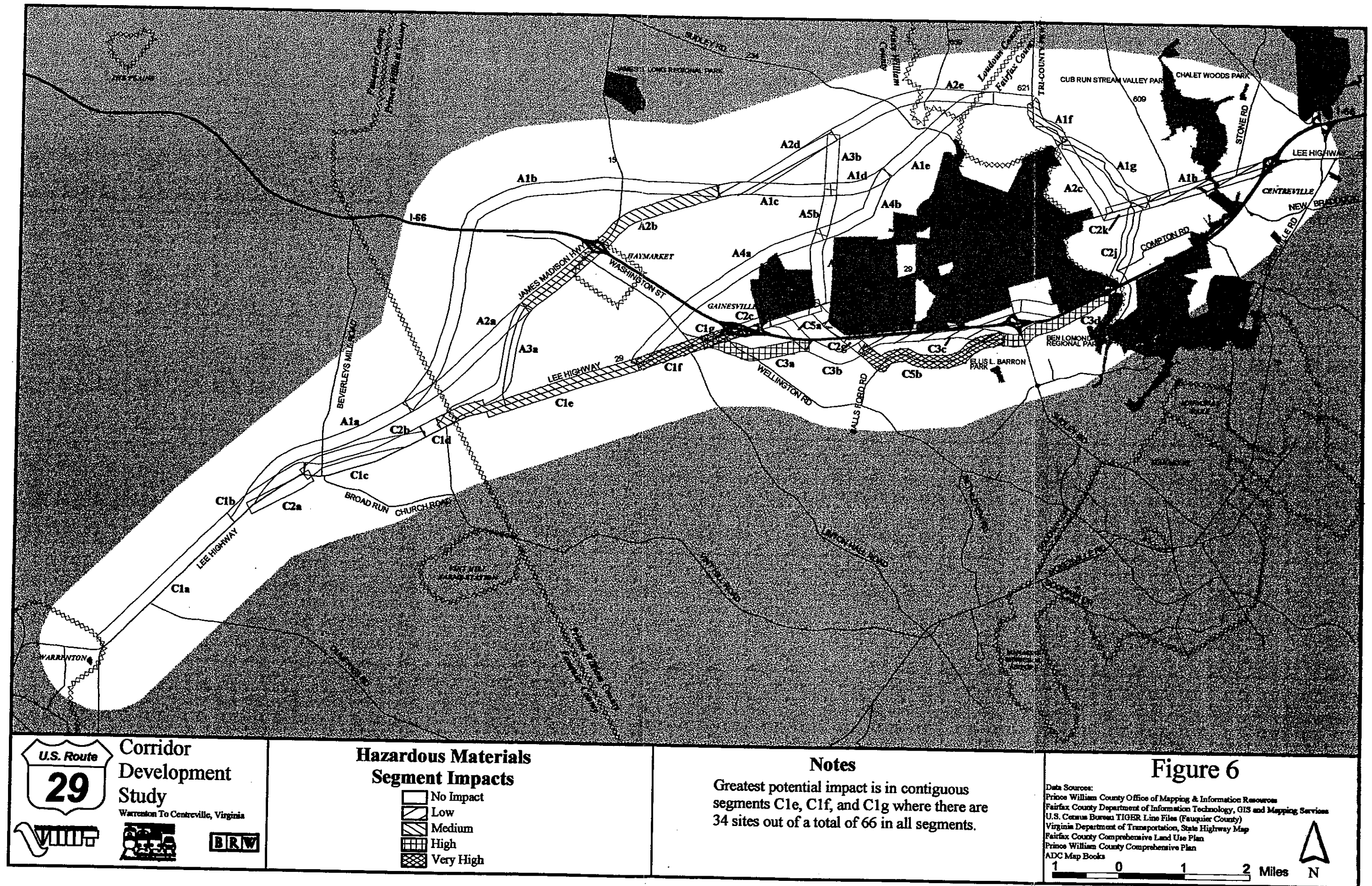
Notes

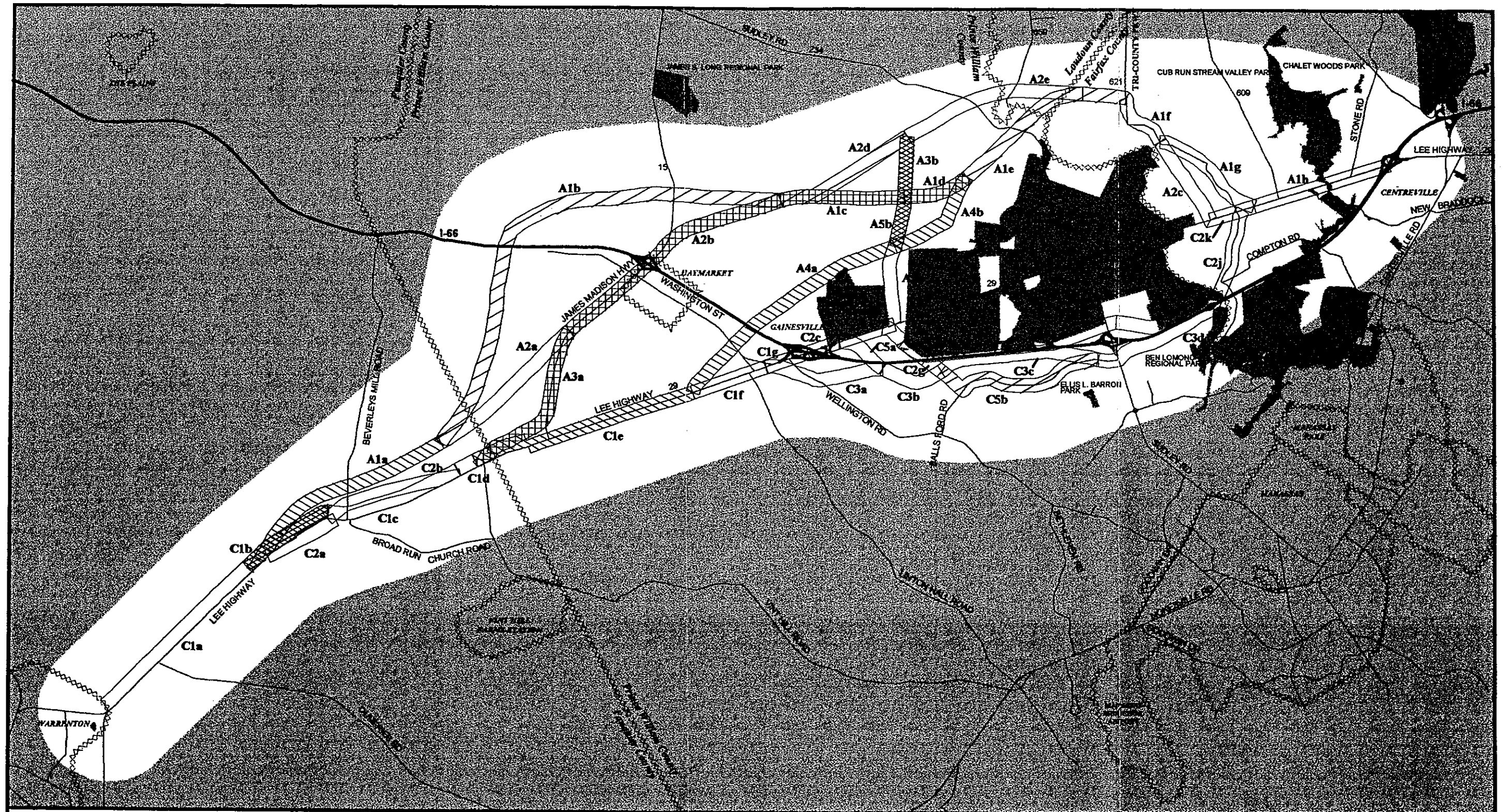
Greatest wetlands impact is in segments C2i and C2j where 10 acres could potentially be impacted. This is closely followed by segments C3d and C2j where 9 acres could potentially be impacted.

Figure 5

Data Sources:
 Prince William County Office of Mapping & Information Resources
 Fairfax County Department of Information Technology, GIS and Mapping Services
 U.S. Census Bureau TIGER Line Files (Fauquier County)
 Virginia Department of Transportation, State Highway Map
 Fairfax County Comprehensive Land Use Plan
 Prince William County Comprehensive Plan
 ADC Map Books







Corridor Development Study
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Steep Slopes Segment Impacts

	No Impact
	Low
	Medium
	High
	Very High

Notes

Greatest potential impact is in contiguous segments A3b and A5b where there are 5600 linear feet of steep slopes requiring two bridges.

Figure 7

Data Sources:
 Prince William County Office of Mapping & Information Resources
 Fairfax County Department of Information Technology, GIS and Mapping Services
 U.S. Census Bureau TIGER Line Files (Fauquier County)
 Virginia Department of Transportation, State Highway Map
 Fairfax County Comprehensive Land Use Plan
 Prince William County Comprehensive Plan
 ADC Map Books

4.7 HISTORIC RESOURCES

Historic resources evaluated for impacts include historic areas such as the Manassas First Battlefield Core Area, the Manassas Second Battlefield Core area and the Buckland Battlefield Area; and specific sites such as those located within the Buckland Historical District, the Wheeler House, and Cub Run Primitive Baptist Church. A list identifying each historic resource and a map of historic site locations are included in Appendix C. The battlefield areas and the historic sites were each evaluated independently for potential segment impacts as illustrated on Figures 8a and 8b, respectively. On Figure 8a, Historic Battlefields, segments C2h and C2i combined would have the most significant potential impact on battlefield property. These segments are parallel to and immediately north of I-66. They could impact a total of 546 battlefield acres most of which is in the Manassas Second Battle Core area with per mile rates of 122.7 for C2h and 116.8 for C2i. However, the highest rate is 126.9 acres per mile for segment C1b which combined with segment C1c is the next largest area of concentrated impact. These contiguous segments are located in the Battle of Buckland Mills area and could impact 398 battlefield acres.

The prime candidate segments for removal from further consideration because of potential impacts on battlefields are C2h and C2i.

Figure 8b illustrates the relative impact on historic sites. Contiguous segments C1e and C1f with the highest per mile rates could cause the greatest potential impact with 19 historic sites being affected. Segment C1b with the third highest per mile rate of 3.08 could impact 4 historic sites; however, segment A1b with a per mile rate of 1.41 could potentially impact 10 historic sites.

Segments C1e, C1f and A1b are prime candidates for removal from further consideration because of potential impacts on historic sites.

4.8 PARKLANDS

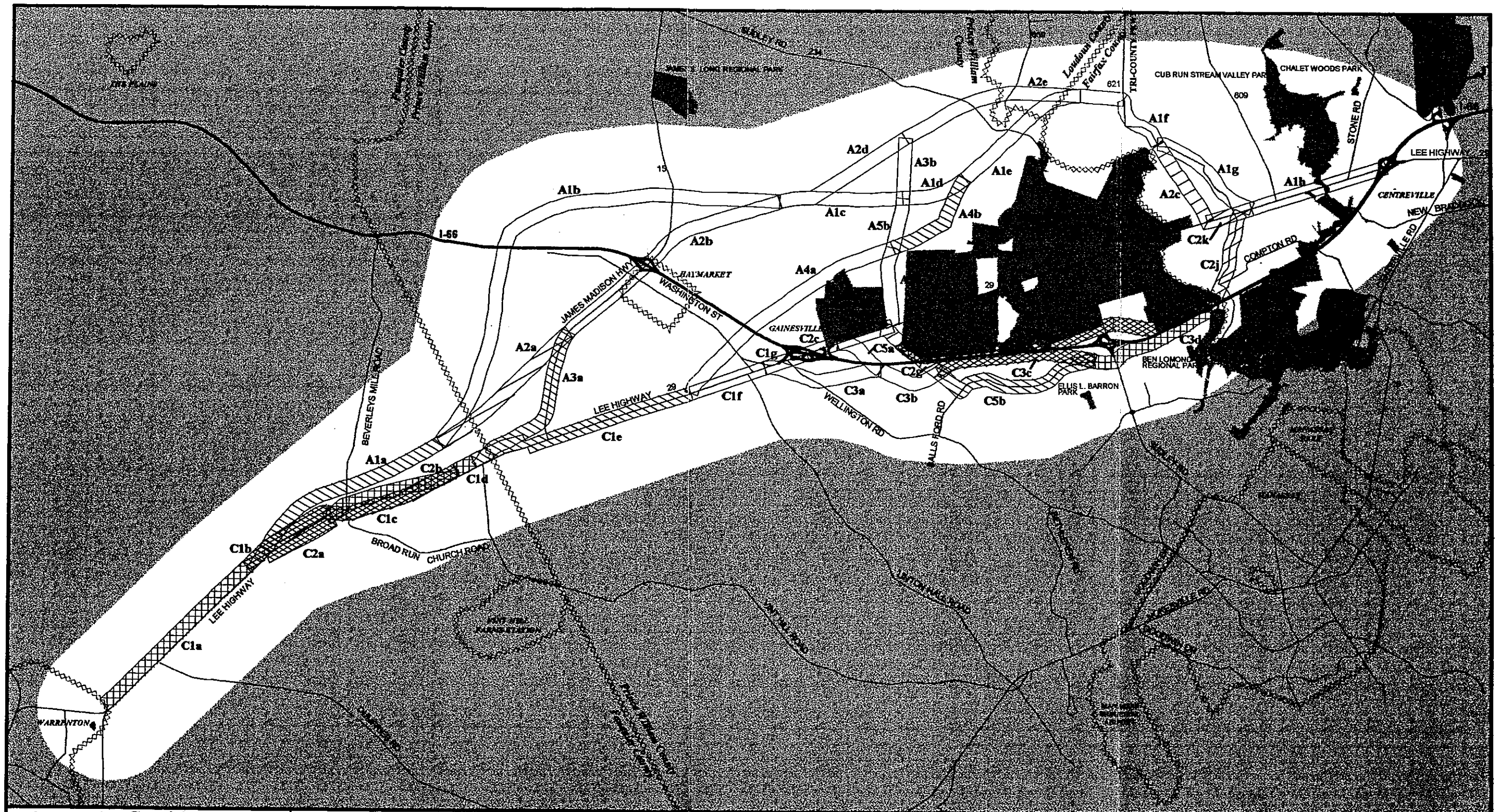
The Route 29 corridor is well endowed with parklands. Figure 9 shows that segments having the greatest impact on parklands are C2h and C2i, which together could potentially impact 292 acres. These two segments lie north of I-66 and could impact the Manassas National Battlefield Park. The next largest concentrated impact on parks is far down the scale. Segments C2c and C2d potentially impact 27 acres of the Conway Robinson Memorial State Forest. Remaining segment impacts on parks are very minimal or non-existent. All of the above identified segments are in the south bypass alignments. None of the north bypass alignments would impact parks except segment A4a which could affect 6 acres along the north perimeter of the Conway Robinson Memorial State Forest.





















The prime candidate segments for removal from further consideration because of potential impacts on parklands are C2h and C2i.

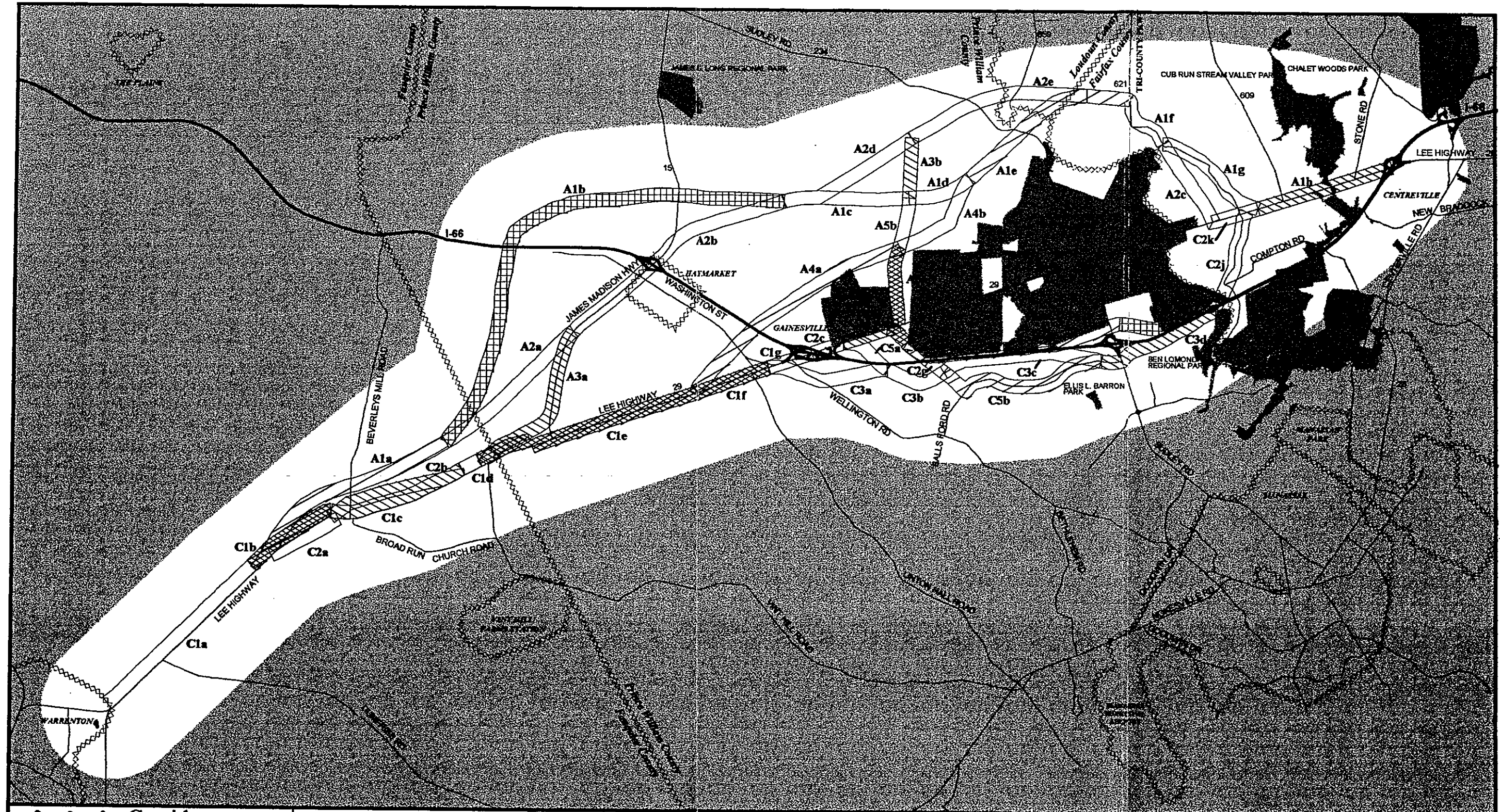
4.9 SUMMARY OF ENVIRONMENTAL EVALUATIONS




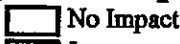


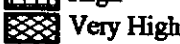



The several alternative alignments being considered in the Route 29 improvement study were evaluated for potential impacts on natural and cultural resources. Alignments were in three major areas: a north bypass, a south bypass and present roadway alignments. Each alignment was assigned a 1,000 foot wide corridor. Alignments were broken into forty-six homogenous segments to facilitate analysis of potential impacts on the eight categories of natural and cultural environmental features.

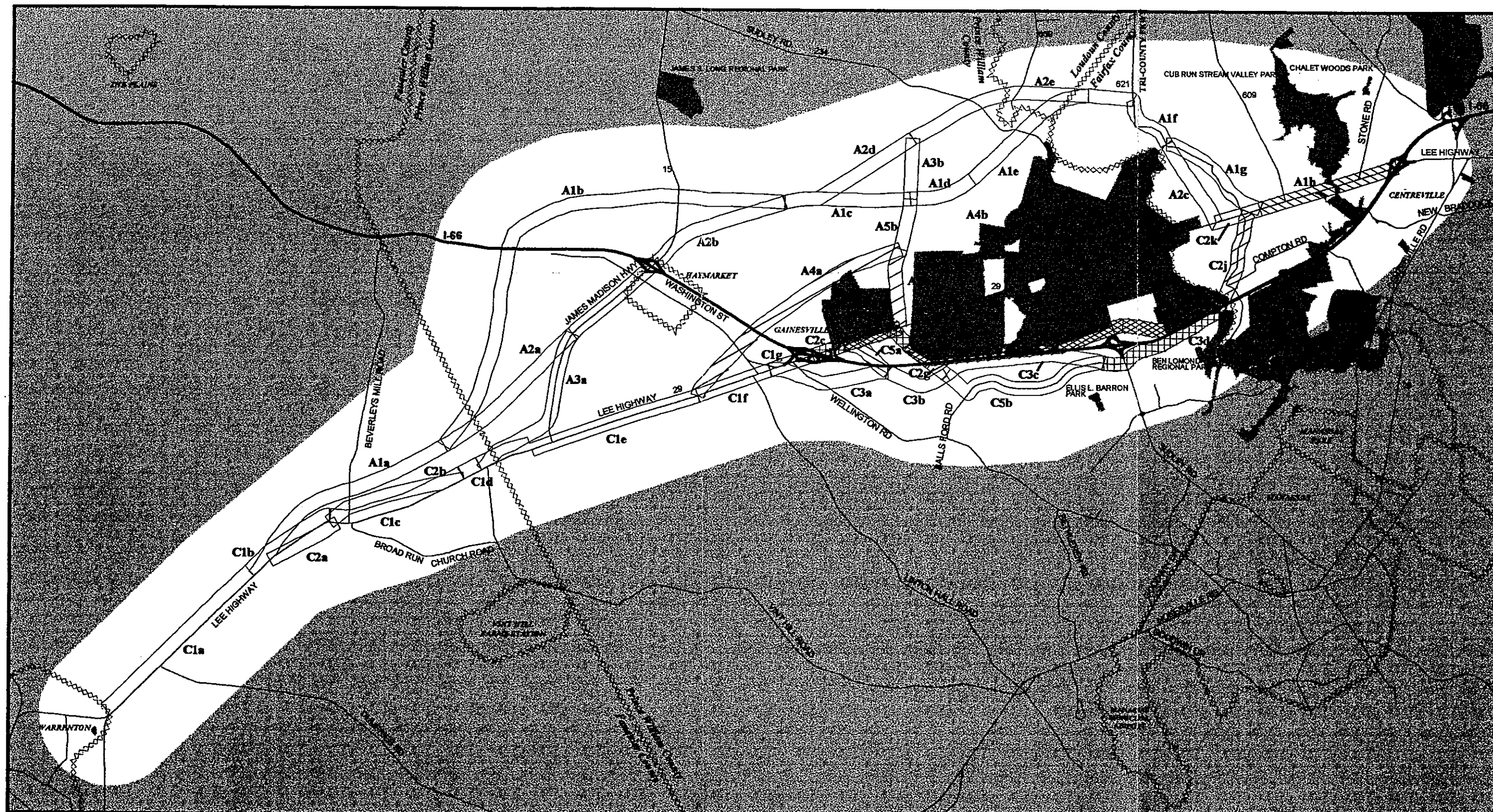
A north bypass alignment has the least potential for impact with five of the environmental features (community resources, hazardous materials, historic resources, parks and buildings). A south bypass alignment has the least potential for impact with three environmental features (wetlands, floodplains and steep slopes).













 <p>Corridor Development Study Warrenton To Centreville, Virginia</p>  	<p>Historic Battlefields Segment Impacts</p> <table border="0"> <tr> <td></td> <td>No Impact</td> </tr> <tr> <td></td> <td>Low</td> </tr> <tr> <td></td> <td>Medium</td> </tr> <tr> <td></td> <td>High</td> </tr> <tr> <td></td> <td>Very High</td> </tr> </table>		No Impact		Low		Medium		High		Very High	<p>Notes</p> <p>Greatest impact is in contiguous segments C2h and C2i where 546 acres could potentially be impacted, followed by contiguous segments C1b and C1c where 398 acres could potentially be impacted.</p>	<p>Figure 8a</p> <p>Data Sources: Prince William County Office of Mapping & Information Resources Fairfax County Department of Information Technology, GIS and Mapping Services U.S. Census Bureau TIGER Line Files (Fauquier County) Virginia Department of Transportation, State Highway Map Fairfax County Comprehensive Land Use Plan Prince William County Comprehensive Plan ADC Map Books</p>  
	No Impact												
	Low												
	Medium												
	High												
	Very High												



 <p>Corridor Development Study Warrenton To Centerville, Virginia</p>  	<p>Historic Sites Segment Impacts</p> <ul style="list-style-type: none">  No Impact  Low  Medium  High  Very High 	<p>Notes</p> <p>Greatest impact is in contiguous segments C1e and C1f where 19 historic sites could potentially be impacted.</p>	<p>Figure 8b</p> <p><small>Data Sources: Prince William County Office of Mapping & Information Resources Fairfax County Department of Information Technology, GIS and Mapping Services U.S. Census Bureau TIGER Line Files (Fauquier County) Virginia Department of Transportation, State Highway Map Fairfax County Comprehensive Land Use Plan Prince William County Comprehensive Plan ADC Map Books</small></p>  
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 <p>Corridor Development Study Warrington To Centreville, Virginia</p>  	<p>Parklands Segment Impacts</p> <ul style="list-style-type: none">  No Impact  Low  Medium  High  Very High 	<p>Notes</p> <p>Greatest impact is in contiguous segments C2h and C2i where 292 acres of parkland could potentially be impacted.</p>	<p>Figure 9</p> <p><small>Data Sources: Prince William County Office of Mapping & Information Resources Fairfax County Department of Information Technology, GIS and Mapping Services U.S. Census Bureau TIGER Line Files (Fauquier County) Virginia Department of Transportation, State Highway Map Fairfax County Comprehensive Land Use Plan Prince William County Comprehensive Plan ADC Map Books</small></p>  
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5.0 TRAVEL DEMAND

5.1 EXISTING TRAFFIC VOLUMES

Figure 10 documents existing daily (1996) traffic volumes in the Route 29 study area. Traffic volumes on Route 29 range from approximately 35,000 to 40,000 vehicles per day both east and west of Manassas National Battlefield Park. Within the park, traffic volumes on Route 29 are approximately 9,000 to 10,000 vehicles per day. Subsequent to the 1996 traffic counts, completion of improvements to I-66 in the vicinity of the park have reduced traffic volumes through the park.

In June, 1996 a Transportation Study of the Manassas National Battlefield Park was completed for the National Park Service. The Manassas Battlefield Transportation Study included peak hour traffic counts and intersection operations analysis of intersections in the park. The analysis indicated that the Route 29 intersections with Pageland Lane (Route 705) and Featherbed Lane (Route 622) both operate at Level of Service A during both the morning and evening peak traffic hours. This is indicative of minimal delay and excellent traffic operating conditions. However, the intersection of Route 29 and Route 234 was found to operate at Level of Service F during both the morning and evening peak traffic hours. Level of Service F indicates congested traffic conditions with extremely long delays; the traffic demand volume exceeds the available intersection capacity.

According to the Battlefield Transportation Study, field observations of operations at the traffic signal at Route 29 and Route 234 indicate that during the morning peak period vehicle queues on the west approach (eastbound traffic) extended west beyond the park boundary and vehicle delays were as much as 15 minutes for eastbound traffic. During the evening peak hours, westbound traffic queued to the east past the Stone Bridge.

Through the study area, traffic volumes on I-66 increase from west to east with approximately 28,000 vehicles per day west of Route 15 to approximately 90,000 vehicles per day east of the Route 29 Centreville interchange.

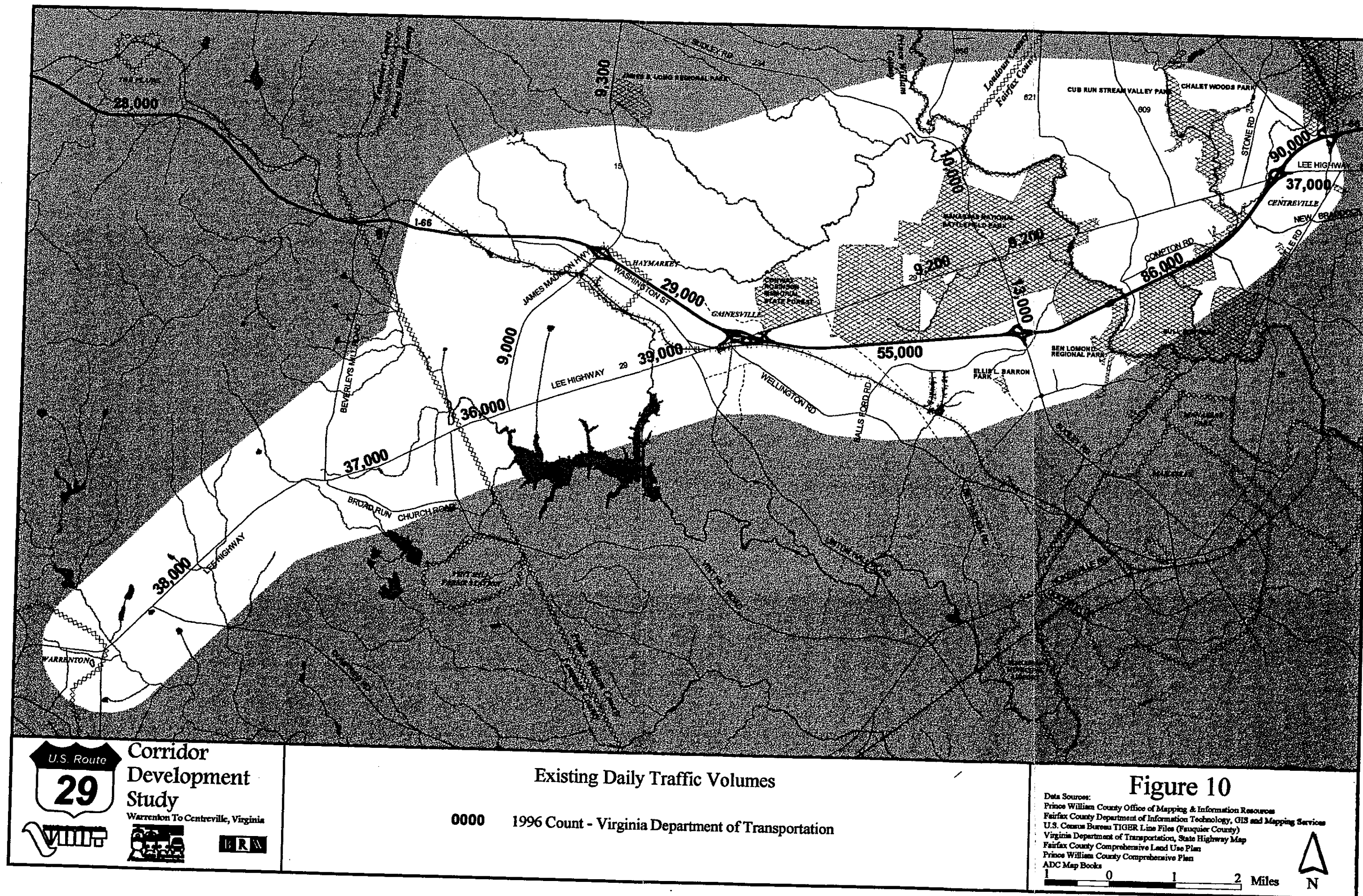
5.2 FUTURE TRAFFIC VOLUMES

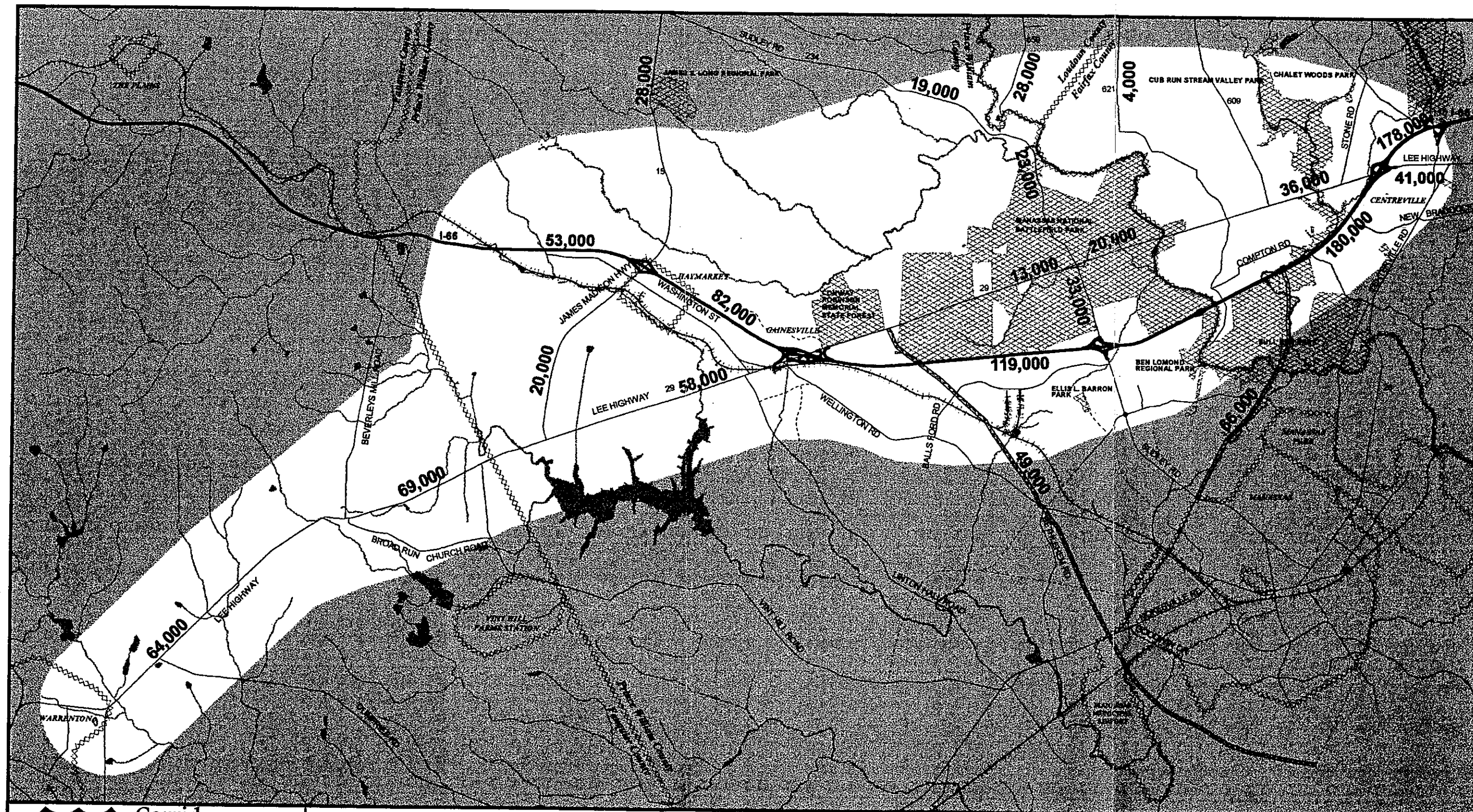
Traffic volume forecasts for the Year 2020 have been prepared using the Northern Virginia MIS Regional Travel Model. This model was originally developed for the Dulles Rail Study. It was then modified as part of the I-66 Corridor MIS to incorporate an expanded regional cordon and increased number of travel analysis zones. The North Virginia MIS Regional Travel Model was run using MWCOG Version 5.3 land use forecasts.

For purposes of transportation analysis, three alternative roadway conditions were selected for analysis to bracket the range of potential future traffic conditions suggested by the alternative alignment options:

- 2020 CLRP - The 2020 Constrained Long Range Plan (CLRP) road system assumes completion of roadway improvements documented in the CLRP. In the study area, the primary CLRP roadway improvements are the Route 234 bypass south of I-66, the Route 28 bypass (Tri-County Parkway) south of I-66 and the addition of one HOV lane and one general purpose lane to I-66 west to Gainesville. Under this condition, it is assumed that both Route 29 and Route 234 through the park remain open for through traffic with no change in roadway capacity. The CLRP road network represents a "no-build" condition if no additional actions are taken in the Route 29 corridor.
- North Bypass - This road network assumes a north bypass of the park following the Tri-County Parkway alignment north to north of the park. The bypass would then go west on new alignment on the north side of Bull Run intersecting with Route 15 just north of the Route 15/I-66 interchange. The bypass would then follow Route 15 to just north of the existing Route 15/Route 29 intersection where a bypass of the Buckland Historic District would relocate the intersection with existing Route 29 west to Vint Hill Road. For purposes of travel modeling, the north bypass was represented in the travel model as a 4-lane expressway. In addition to CLRP road improvements, this network assumes the Route 234 bypass between I-66 and existing Route 234 (Sudley Road) with no access at existing Route 29. The network also assumes the Tri-County Parkway between Route 29 and I-66 with a full interchange at I-66. Under this condition, existing Route 29 is assumed to be discontinuous at the Bull Run crossing and existing Route 234 is assumed to be discontinuous just north of existing Route 29. The north bypass option for traffic forecasting was selected based on review of public comments and preliminary environmental analysis. The travel forecasting process is not alignment specific; the forecasts reflect connectivity between roadways, origins and destinations but minor alignment changes would not significantly change the travel forecasts. Therefore, the north bypass alignment is generally representative of the complete set of north bypass alignment options.
- Route 29 Designation on I-66 - This network assumes that Route 29 is designated on I-66 between Centreville and Gainesville. The travel modeling network assumed the addition of one HOV lane and one general purpose lane to I-66 in this area consistent with the CLRP. Under this condition, existing Route 29 is assumed to be discontinuous at the Bull Run crossing and existing Route 234 is assumed to be discontinuous just north of existing Route 29. This network assumes the Route 234 bypass between I-66 and existing Route 234 (Sudley Road) with no access at existing Route 29. The network also assumes the Tri-County Parkway between Route 29 and I-66 with a full interchange at I-66. This option reflects the traffic volumes that will exist if through traffic is not allowed through the park and no new bypass is provided.

The results of the 2020 CLRP analysis are shown on Figure 11. Traffic volumes on Route 29 are forecast to range from approximately 36,000 to 41,000 vehicles per day east of the park and 58,000 to 69,000 vehicles per day west of the park. Within the park, traffic volumes on Route 29 are forecast to increase to 13,000 to 20,000 vehicles per day. Given the existing Level of Service F traffic operations at the intersection of Route 29 and Route 234, and the forecast increase in traffic, this intersection can be expected to be extremely congested during not only the morning and evening peak hours but also during mid-day periods. With the CLRP road network, traffic volumes on I-66





**Corridor
Development
Study**
Warrenton To Centreville, Virginia



Forecast Year 2020 Traffic Volumes with the CLRP Road System

0000 Forecast 2020 Daily Traffic



Planned Roadway in CLRP

Figure 11

Data Sources:
 Prince William County Office of Mapping & Information Resources
 Fairfax County Department of Information Technology, GIS and Mapping Services
 U.S. Census Bureau TIGER Line Files (Fauquier County)
 Virginia Department of Transportation, State Highway Map
 Fairfax County Comprehensive Land Use Plan
 Prince William County Comprehensive Plan
 ADC Map Books

1 0 1 2 Miles



are forecast to range from approximately 53,000 vehicles per day west of Route 15 to approximately 180,000 vehicles per day west of the Route 29 interchange at Centreville. This represents an increase of 89 to 209 percent in traffic volumes on I-66. Traffic volumes are forecast to increase substantially on I-66 just east of the interchange with the Route 28 bypass.

Figure 12 shows the 2020 traffic volume forecasts with a Route 29 north bypass. Traffic volumes on Route 29 east and west of the park range from approximately 39,000 to 72,000 vehicles per day. On the bypass north of the park, traffic volumes are approximately 29,000 vehicles per day with a maximum of 46,000 vehicles per day on the new crossing of Bull Run. Within the Manassas National Battlefield Park, it is assumed that both Route 29 and Route 234 are closed to through traffic so traffic volumes will be minimal.

Figure 13 shows the 2020 traffic volume forecasts associated with designating Route 29 on I-66 between Centreville and Gainesville. Traffic volumes on Route 29 east and west of the park range from approximately 33,000 to 68,000 vehicles per day. Within the Manassas National Battlefield Park, it is assumed that both Route 29 and Route 234 are closed to through traffic so traffic volumes will be minimal. With Route 29 closed to through traffic through the park, traffic volumes on I-66 west of Route 234 are expected to be approximately 129,000 vehicles per day compared to 119,000 vehicles per day under the CLRP alternative and 118,000 vehicles per day under the north bypass alternative and 55,000 vehicles per day in the existing condition.

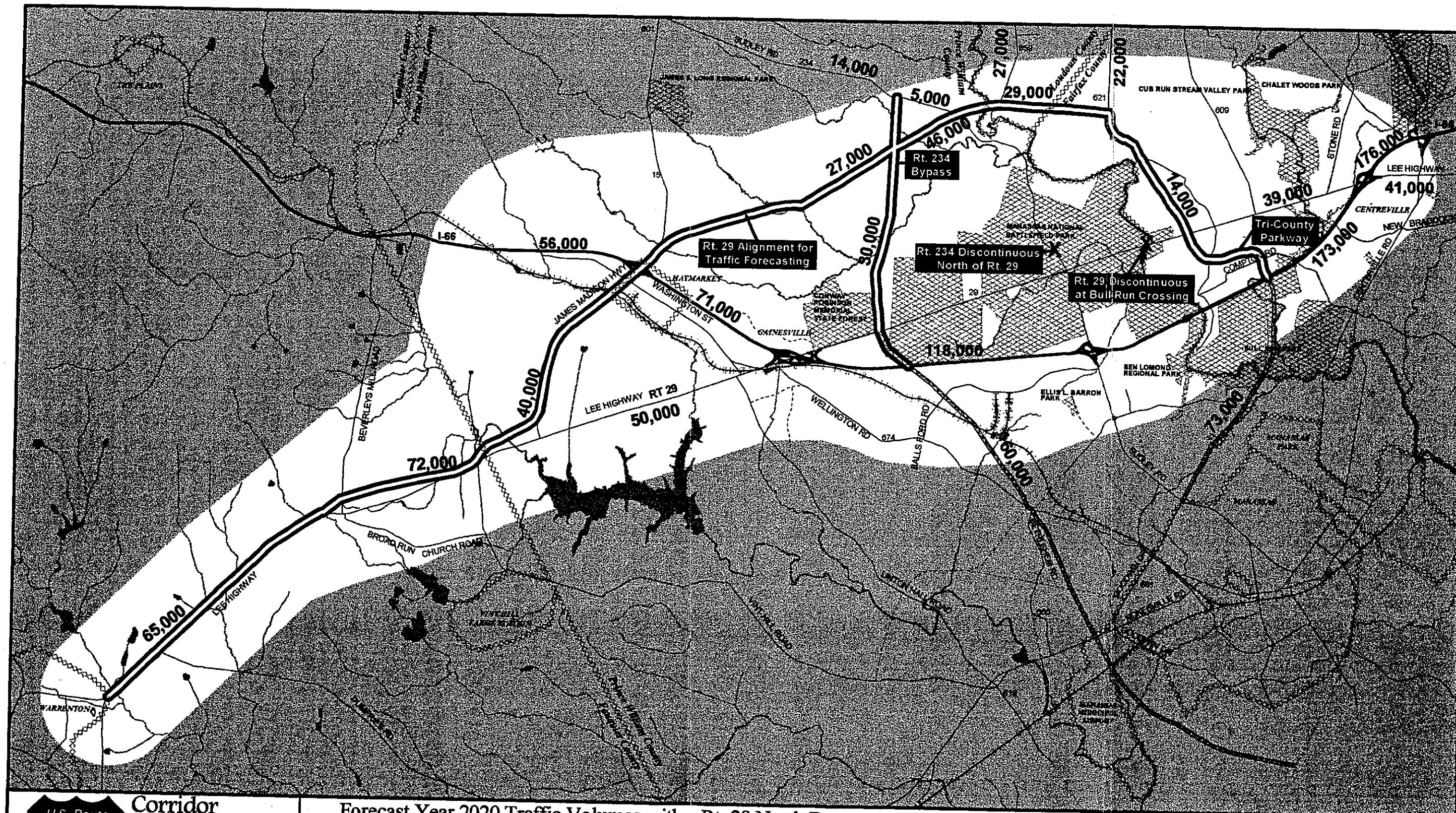
To assist in the comparison of traffic volumes, the table below presents the traffic volumes for various conditions at selected locations.




TABLE 2
COMPARISON OF TRAFFIC VOLUMES

LOCATION	EXISTING TRAFFIC VOLUME	2020 CLRP	2020 NORTH BYPASS	2020 RT 29 DESIGNATION ON I-66
Rt. 29 East of Rt. 234	9,200	20,000	0	0
Rt. 29 West of Rt. 15	36,000	69,000	72,000	68,000
Rt. 29 East of I-66 (Centreville)	37,000	41,000	41,000	42,000
Rt. 234 North of Rt. 29	10,000	23,000	0	0
I-66 West of Rt. 15	28,000	53,000	56,000	52,000
I-66 West of Rt. 234	55,000	119,000	118,000	129,000
I-66 West of Lee Highway	86,000	180,000	173,000	180,000
Rt. 234 Bypass (North of I-66)	0	0	30,000	28,000
Rt. 29 Bypass	0	0	46,000	0
Tri-County Pkwy (North of I-66)	0	0	14,000	14,000

5.3 CONCLUSIONS

- If Route 29 and Route 234 remain open to through traffic through the park, traffic volumes on Route 29 are forecast to increase from approximately 9,000 to 20,000 vehicles per day.
- Comparing existing to 2020 CLRP traffic volumes indicates that traffic volumes on many roads in the study area will increase by over 80 percent by the year 2020.
- Traffic volumes forecast to use a north bypass of Manassas National Battlefield Park (29,000 to 46,000 vehicles per day) warrant further consideration of a north bypass.
- If Route 29 is closed to through traffic through the park and no new bypass route is provided (Route 29 is designated on I-66), traffic volumes on I-66 will increase by approximately 10,000 vehicles per day.




Corridor Development Study
 Warrenton To Centreville, Virginia



Forecast Year 2020 Traffic Volumes with a Rt. 29 North Bypass and Rt. 29 and Rt. 234 Discontinuous Through the Park





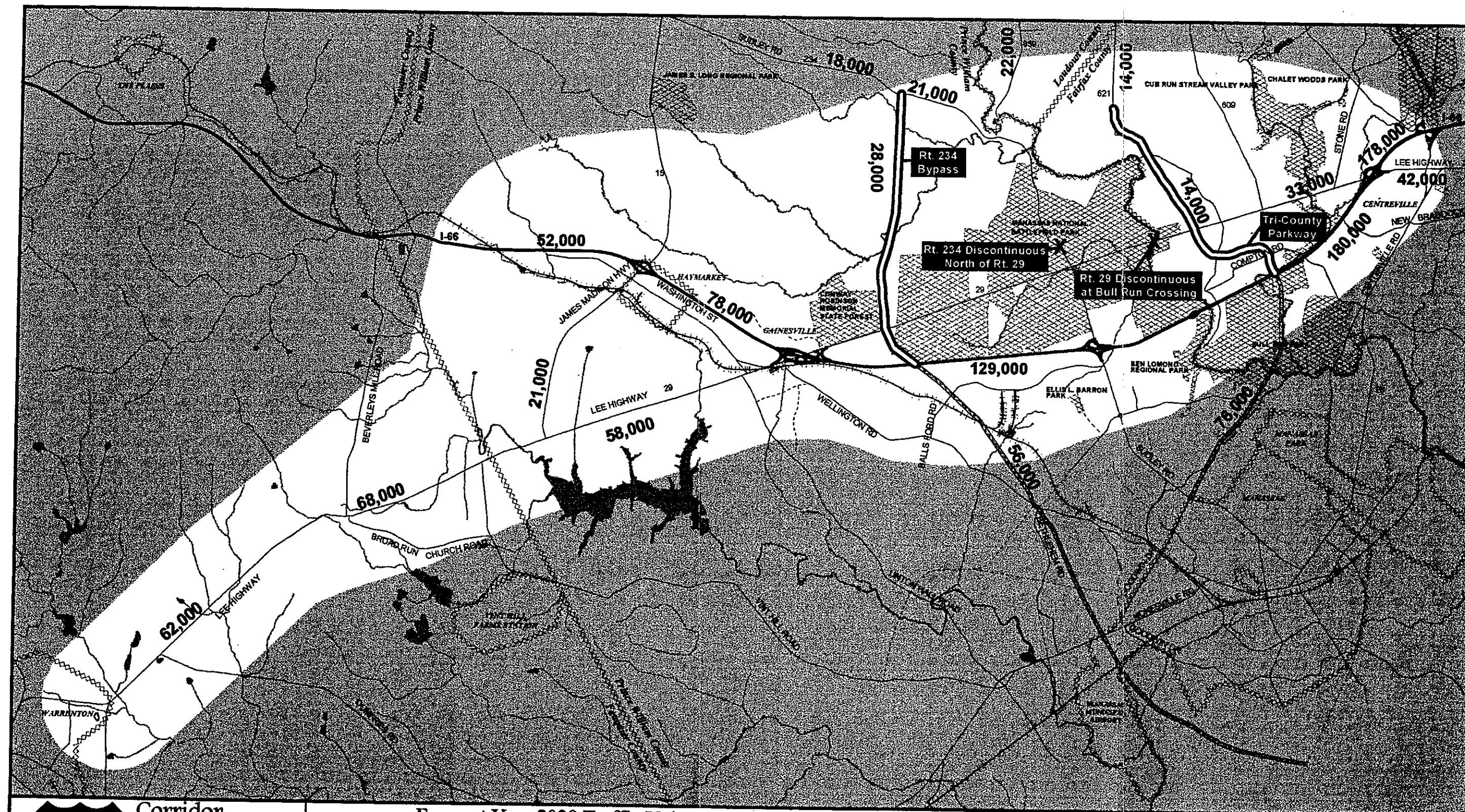
 Planned Roadway in CLRP
 Route 29 Road Network for Traffic Forecasting
0000 Forecast 2020 Daily Traffic

Figure 12

Data Sources:
 Prince William County Office of Mapping & Information Resources
 Fairfax County Department of Information Technology, GIS and Mapping Services
 U.S. Census Bureau TIGER Line Files (Fauquier County)
 Virginia Department of Transportation, State Highway Map
 Fairfax County Comprehensive Land Use Plan
 Prince William County Comprehensive Plan
 ADC Map Books



**Corridor
Development
Study**
Warrenton To Centerville, Virginia



**Forecast Year 2020 Traffic Volumes with Rt. 29 Designated on I-66 and
Rt. 29 and Rt. 234 Discontinuous Through the Park**

0000 Forecast 2020 Daily Traffic

Planned Roadway in CLRP

New Roadway Included in Road Network for Traffic Forecasting

Figure 13

Data Sources:
Prince William County Office of Mapping & Information Resources
Fairfax County Department of Information Technology, GIS and Mapping Services
U.S. Census Bureau TIGER Line Files (Fauquier County)
Virginia Department of Transportation, State Highway Map
Fairfax County Comprehensive Land Use Plan
Prince William County Comprehensive Plan
ADC Map Books

1 0 1 2 Miles



6.0 PUBLIC INVOLVEMENT

6.1 REVIEW COMMITTEES

Two review committees were established to provide oversight and input during the course of the study and provide the formal linkage between the Study team and the community. The committees are composed of representatives of affected local, regional, state and federal units of government. The Technical Advisory Committee (TAC) was established to help guide the study to ensure that it addressed the full range of local and regional concerns. This committee is the primary formal linkage between the Study team and interested parties. The Policy Advisory Committee was established to provide guidance to the Virginia Department of Transportation (VDOT) and the Virginia Department of Rail and Public Transportation (DRPT) on decisions regarding Route 29.

Technical Advisory Committee

The Technical Advisory Committee ensures the reliability of the technical methods, assumptions, and results of all work to evaluate the alternatives and their impacts. The TAC also ensures that the Study complies with all procedural requirements of local, state, and federal agencies with jurisdiction over the Corridor, the alternative transportation improvements, or the potential impacts. Committee members receive review drafts of all technical reports and provide comments on the reasonableness of both the approach and the results. The TAC advises VDOT and DRPT of its findings. The TAC also may make recommendations to the Study team and VDOT and DRPT on issues that arise during the study and on the selection of a preferred set of alignment options for further study. Membership of the TAC is as follows:

TECHNICAL ADVISORY COMMITTEE	
Virginia Department of Transportation Virginia Department of Rail and Public Transportation Federal Transit Administration Federal Highway Administration National Park Service Metropolitan Washington Council of Governments Northern Virginia Transportation Commission Potomac-Rappahannock Transportation Commission Virginia Railway Express	Washington Metropolitan Area Transit Authority Metropolitan Washington Airports Authority Arlington County Fairfax County Fauquier County Loudoun County Prince William County City of Fairfax

Policy Advisory Committee

The Policy Advisory Committee was established by the Secretary of Transportation, Robert E. Martinez, to provide guidance to VDOT and DRPT on decisions regarding the Route 29 Study. The Policy Advisory Committee met frequently throughout the study process to review interim study products and provide advice on major study decisions. Membership of the Policy Advisory Committee is as follows:

POLICY ADVISORY COMMITTEE

Robert T. Lee, Chair, Commonwealth Transportation Board
Ellen M. Bozman, Arlington Board of Supervisors
Michael R. Frey, Fairfax County Board of Supervisors
David C. Mangum, Fauquier County Board of Supervisors
John Mason, Mayor, City of Fairfax
Kathleen Seefeldt, Prince William County Board of Supervisors
David Snyder, City of Falls Church
Robert B. Dix, Jr., Fairfax County Board of Supervisors
Katherine K. Hanley, Fairfax County Board of Supervisors
Charles A. Robinson, Jr., Mayor, Town of Vienna
Edgar S. Wilbourn, III, Prince William County Board of Supervisors

6.2 COUNTY AND NATIONAL PARK SERVICE INVOLVEMENT

Individual briefing meetings were held in September/October 1996 with the counties of Fauquier, Prince William, and Fairfax, and the National Park Service. The purpose of the meetings was to provide an opportunity to comment on candidate alignments for Route 29 and give input to the public involvement process.

6.3 GENERAL PUBLIC

Two Public Information Meetings were held during the course of the Route 29 Study. The first meeting was held on January 27, 1997 and the second meeting was held one year later on January 8, 1998. The meetings provided a forum for public input into the study process. The attendance at each of these public information meetings was over 200 persons. As a result of these public meetings, approximately 1,000 formal written and verbal comments were received and tabulated.

January 27, 1997 Public Information Meeting

The first public information meeting on January 27, 1997 was held at Mountain View Elementary School in Haymarket from 6:00 p.m. to 9:00 p.m. The meeting was established and advertised as an informational meeting only, at which no formal presentation would be made and no official actions would be taken. This point was reiterated at the sign-in table at the meeting.

The general format of the meeting consisted of four identical display stations positioned in the corners of the school gymnasium each of which were staffed by VDOT, DRPT, and BRW Consultant Team members. Four separate stations were provided to enable quick and convenient access to the information even at the most crowded times. The stations included the following boards:

- Purpose of Meeting
- Purpose of Study
- Study Process Chart
- Map of Study Alternatives

- Map of Community Resources
- Map of Historical Resources
- Map of Water Resources
- Study Team Members

Tables with study area maps were situated around the gymnasium to allow attendees to note comments and questions about the alternatives as well as to add detail about study area features important to them.

Overview of Meeting

Approximately 250 people attended the meeting (222 persons signed in). A substantial amount of positive feedback pertaining to the meeting format and purpose was received from those in attendance. Comments such as 'person-friendly' and 'appreciate the early input opportunity' were common. One of the key reasons for the positive feedback was that all staff was instructed before the meeting to emphasize that no alignment decisions had been made and that VDOT was looking for citizen input/guidance prior to finalizing a universe of alternatives and initiating the alternatives screening process. People also commented that the newsletter was friendly and informative.

All attendees were encouraged to ask questions of the project staff and formally document concerns and opinions via written comment cards or directly onto the study area maps. An organized group (Citizens Against Roads for Developers - CARD, Inc.) was allowed to set up a table in the gymnasium and display/distribute their literature. A number of the members arrived with picket signs expecting a public hearing format and wanting to be heard. They and others seemed disarmed by the open-ness of the meeting and the attitude of the project staff that wanted to provide information, listen to concerns, and answer questions.

General Public Comment

A total of 411 comments were submitted on 162 comment cards and the study area working maps provided at the meeting. A summary of the written comments received is attached in Appendix D. Issue areas receiving at least ten comments include:

- Designate Route 29 on I-66 (63 comments)
- No need to relocate Route 29 out of the Battlefield Park (53 comments)*
- Alternative locations for Route 29 will be tax dollars spent for little or no benefit to local commuters and residents (32 comments)
- In favor of a south bypass (21 comments)
- Upgrade Route 29 west of Gainesville (20 comments)
- Build Route 234 Bypass and Tri-County Parkway (20 comments)
- No need to upgrade Route 29 west of the Park (18 comments)
- Upgrade Route 29 through the Park to alleviate bottleneck and to be consistent with the traffic flow at each end (17 comments)

- Opposed to alignments running north and west because of impacts to environmental resources, historic resources, and existing residential development (14 comments)
- Relocate Route 29 out of Manassas Battlefield (13 comments)
- Upgrade Route 29 west of the Park (10 comments)

Much of the oral comment provided during the meeting focused on the issues noted above and can be summarized into the following:

- Do not relocate Route 29 north of the Battlefield Park.
- Redesignate Route 29 along I-66 between Centreville and Gainesville.
- Upgrade Route 29 on its existing alignment.
- Too many transportation projects under study in the region. Coordinate project mailing lists.
- The historic survey work should be extended beyond the existing Route 29 corridor. *(This additional effort has been completed and is reflected in this report.)*

Notes:

- * At the top of the comment sheet the question, "Is there a need to relocate Route 29 out of Manassas National Battlefield Park?" appeared. A number of people felt that this question was misleading. Although many favor relocating Route 29 out of the park, they do not support all of the alternative alignments that were presented and felt that by answering "yes," they could be viewed as endorsing one or more of the alternatives.

January 8, 1998 Public Information Meeting

The second public information meeting was held on January 8, 1998 at the Holiday Inn in Manassas from 6:00 p.m. to 9:00 p.m. The format of this public meeting was similar to that of the first public information meeting with no formal presentation being made and four identical display stations located in the corners of the room. The purpose of this meeting was to present the results of the study's findings, present the four most promising candidate alignments options suggested for further study, and provide an opportunity for public input. The stations included the following boards:

- Purpose of Meeting
- Purpose of Study
- The Study Outline
- Study Process Chart
- Map of Candidate Alignments Suggested for Further Study
- Map of Community Resources
- Map of Historical Resources
- Map of Water Resources
- The Study Team

Reference copies of the Draft Route 29 Corridor Development Study dated, November 11, 1997, were on-hand for review.

Overview of Meeting

Over 200 people attended the meeting. The Route 29 study public information meeting invitation was distributed to 1,499 people on the I-66 mailing list and 1,026 on the Gainesville database. In addition, VDOT placed notices of the public information meeting in local and regional newspapers. All attendees were encouraged to ask questions of the project staff and formally document concerns and opinions via written comments cards. At most times the meeting room was full with participants asking questions of the staff, studying the display maps, reviewing the reference copies of the draft Route 29 report, and filling out comments sheets. A summary of written comments received is in Appendix D.

Approximately ten citizens requested copies of the Draft Route 29 Corridor Development Study report. Reports were mailed to these citizens on January 9, 1998. Additional reference copies of the Draft Route 29 Corridor Development Study Report were placed in the five Prince William County public libraries, the Fauquier County Public Library, the Centreville Regional Library, the Gainesville Mini Library, and the Fairfax City Regional Library.

The organized group, CARD, was again allowed to set up a table in the entry way and display/distribute their literature.

General Public Comment

Approximately 786 comments were submitted by 229 citizens via comment sheets, e-mail, sent correspondence, or orally over the project hotline. The most frequently made comments were:

- 136 comments indicated the alignment that merits support is the Route 29 designation on I-66.
- 67 comments indicated the two Northern Alignments are not acceptable.
- 57 comments indicated major concerns are the environmental impacts on the wetlands and on the historic environment
- 38 comments indicated a preference to leave Route 29 as it is.

7.0 CONCLUSIONS

7.1 CANDIDATE ALIGNMENTS FOR FURTHER STUDY

It is suggested that the following four alignment alternatives be studied in more detail in the next phase of the Route 29 Corridor Development Study:

- No-build - Consistent with the requirements of the National Environmental Quality Act (NEPA) it is recommended that the no-build alternative be carried forward for further analysis. Under this alternative, it is assumed that both Route 29 and Route 234 through the park remain open for through traffic with no change in roadway capacity. Under this alternative, elements of the CLRP would be implemented.
- Long North Bypass - Under this alternative, a "long" north bypass of the park would be constructed. The bypass would follow the Tri-County Parkway alignment north to north of the park. The bypass would then go west on new alignment on the north side of Bull Run intersecting with Route 15 just north of the Route 15/I-66 interchange. The bypass would then follow Route 15 to just north of the existing Route 15/Route 29 intersection where a bypass of the Buckland Historic District would relocate the intersection with existing Route 29 west to Vint Hill Road. West of Vint Hill Road, Route 29 would be constructed on new alignment to New Baltimore. West of New Baltimore, Route 29 would generally follow the existing road alignment with widening along the north side. Under this alternative, existing Route 29 is assumed to be discontinuous at the Bull Run crossing and existing Route 234 is assumed to be discontinuous just north of existing Route 29.
- Short North Bypass - Under this alternative, a "short" north bypass of the Manassas National Battlefield Park would be constructed. This bypass route would follow the Tri-County Parkway alignment north from Route 29 east of the Park to an area north of the Park, where it would turn west and follow a new location alignment crossing both Bull Run and Catharpin Run past Stony Ridge to a junction with the alignment of the proposed Route 234 Bypass north of I-66. The route would then turn south along the Route 234 Bypass alignment to rejoin existing Route 29 west of the Park. From there, improvements to the Route 29 corridor would be provided between the Gainesville area and Warrenton, generally following the existing Route 29 alignment, with widening typically along the north side. Under this alternative, both existing Route 29 and existing Route 234 are assumed to be discontinuous through the Park. The Short North Bypass alignment was added for further study at the November 20, 1997 meeting of the Policy Advisory Committee.
- Route 29 Designation on I-66 - Under this alternative, Route 29 would be designated on I-66 between Centreville and Gainesville. Under this alternative, existing Route 29 is assumed to be discontinuous at the Bull Run crossing and existing Route 234 is assumed to be discontinuous just north of existing Route 29.

The four candidate alignments suggested for further study are shown on Figure 14. Constraints and issues regarding the alignments suggested for further study and the alignments not recommended for further consideration are also shown on the figure and discussed below.

7.2 SOUTH PARK BYPASS ALIGNMENTS

Other than the designation of Route 29 on I-66, no other south park bypass alignment options are recommended for further study. The south bypass alignments south of I-66 would have significant impacts on existing and or planned developments. The south bypass alignments north of I-66 would require park property, would impact the Battlefield Business Park and would impact existing development sites in the transition area back to the existing Route 29 alignment both east and west of the park.

A major concern of VDOT is the availability of an alternative route for I-66 for the purposes of incident management. In the event of an incident on I-66 requiring closure of the facility in one or both directions, an emergency alternative route is desirable. The nature of incidents requiring freeway closure (smoke from fires, fumes from chemical spills, etc.) often extend some distance from the facility depending on the nature of the incident and the wind direction. Therefore, the most desirable alternative route for an interstate facility is not immediately adjacent to the facility but rather some distance away.

All of the south park bypass alternatives, including the designation of Route 29 on I-66 would not provide as desirable alternative route as existing Route 29 through the park. While the Route 29 alignment alternatives immediately north and south of I-66 would accommodate many incidents, they would not be effective if smoke or fumes from an incident on I-66 forced the closure of Route 29 also.

With Route 29 designated on I-66, the incident management route alternative for I-66 would have to follow other roads. Balls Ford and Wellington Road would provide a reasonable alternative between Route 234 and Gainesville. Between Centreville and Route 234 no reasonably direct alternative route exists if Route 29 through the battlefield is closed to through traffic. This is an issue requiring further study.

7.3 NORTH PARK BYPASS ALIGNMENTS

Two north bypass alignment alternatives are suggested for further study in the vicinity of the park. The more northerly alignment (the Long North Bypass) crosses through the southern portion of Loudoun County and is inconsistent with Loudoun County Land Use and Transportation Plans for this area. This alignment would also have to cross an existing quarry in Loudoun County along Route 659 north of Bull Run.

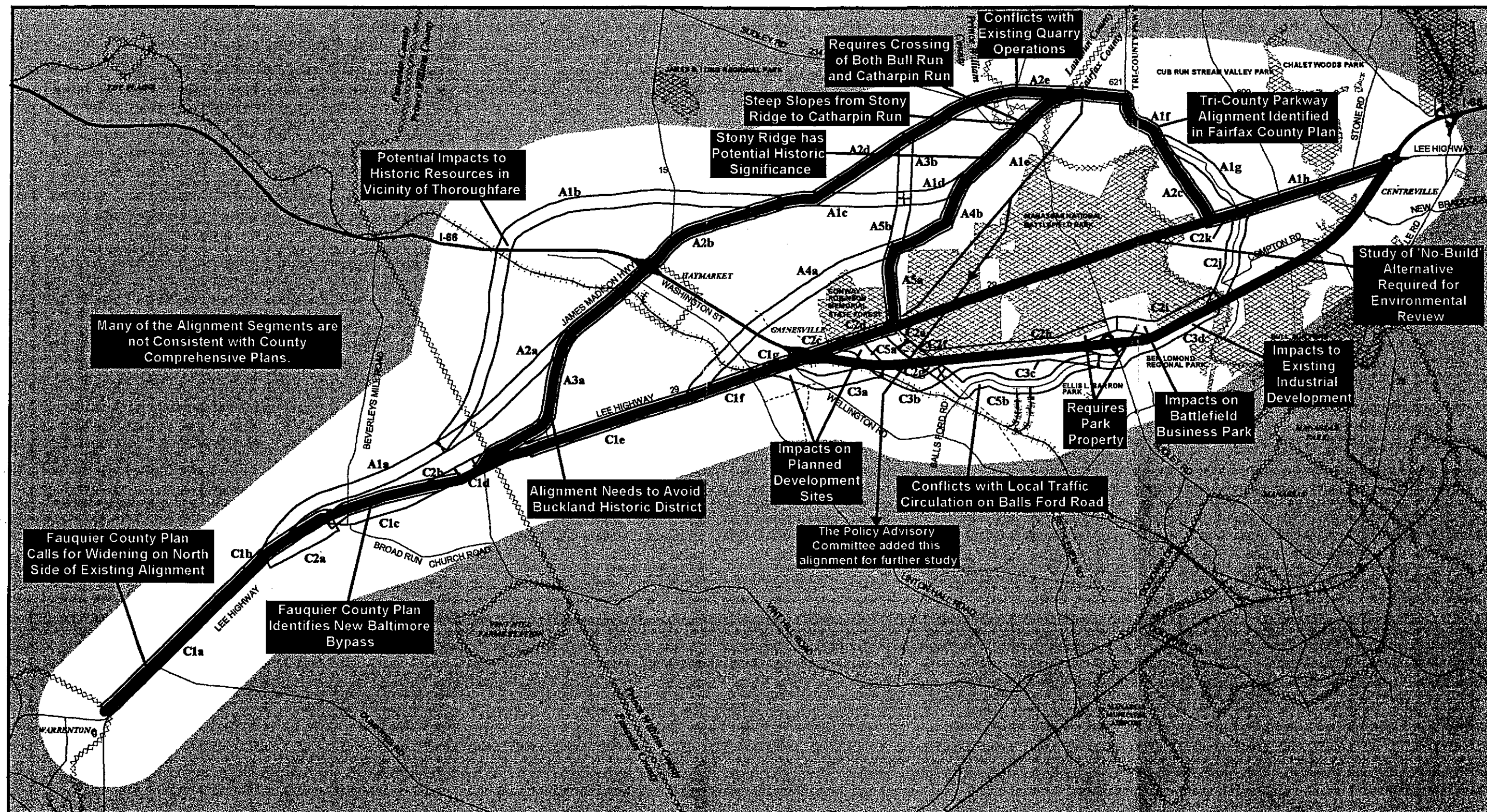


Figure 14

Data Sources:
 Prince William County Office of Mapping & Information Resources
 Fairfax County Department of Information Technology, GIS and Mapping Services
 U.S. Census Bureau TIGER Line Files (Fauquier County)
 Virginia Department of Transportation, State Highway Map
 Fairfax County Comprehensive Land Use Plan
 Prince William County Comprehensive Plan
 ADC Map Books

1 0 1 2 Miles




Corridor Development Study
 Warrenton To Centreville, Virginia

U.S. Route 29

WMU

BRN

Alignment Constraints and Issues

 Candidate alignments (1,000 foot corridor) for further study

NOTE: Further study may result in consideration of alignments beyond the 1,000 foot corridor.

The second alignment option under consideration (the Short North Bypass) would use proposed segments A1e, A4b, and a portion of the proposed Route 234 bypass (segment A5a) to connect the north bypass of the park back to existing Route 29.

Relative to the more northerly north bypass, this option has the following features:

- Stream crossings - The more northerly alignment would only cross Bull Run. The southerly alignment would cross both Bull Run and Catharpin Run.
- Steep slopes - There is approximately 100 feet of elevation difference between the level of Bull Run and the top of Stony Ridge along segment A1e. The cost and visual impact of an engineering design to accommodate this steep slope is not desirable.
- Historic significance of Stony Ridge - Confederate troops camped in the vicinity of Stony Ridge during the Second Battle of Manassas. It is likely that the area affected would have been contained by the natural boundary formed by Catharpin Run. While this area has no "official" historic designation, it is desirable to avoid it if possible because of the potential for historic artifacts.
- The more southerly route would be a less effective bypass for Route 29 than the more northerly route.

It is likely that rather than using a Route 29 bypass following the Tri-County Parkway, proposed route segments A1e, A4b, and the Route 234 bypass, most drivers would instead divert to I-66. The southerly route would improve north-south connectivity between the Gainesville area and the Dulles Airport area. This may be desirable to serve future land use development patterns.

7.4 ALIGNMENT OPTIONS WEST OF MANASSAS NATIONAL BATTLEFIELD PARK

West of the park, the long north bypass alignment option ties in to existing Route 15 just north of the Route 15 interchange with I-66. The option then follows the existing Route 15 alignment south to just north of the Buckland area. In this area, a new bypass around Buckland is suggested to avoid impacts to the Buckland Historic District. Route 29 would tie in to the existing alignment in the vicinity of Vint Hill Road.

An alternative to the alignment in this area would continue west of Route 15 on new alignment (segment A1b) crossing I-66 approximately 2 miles west of Route 15 where a new interchange could potentially be located. This alignment is not suggested for further study for the following reasons:

- Historic structures in Thoroughfare - There are a number of potentially historic structures in the vicinity of Thoroughfare that could be impacted by this alignment.

- Consistency with Fauquier County planning - Fauquier County has restricted development along the north side of existing Route 29. Therefore, it is desirable to utilize the existing Route 29 alignment within Fauquier County.

West of Vint Hill Road, the north bypass option is suggested to be realigned to the north. The purpose of this realignment is to "straighten" the curve in existing Route 29 in the New Baltimore area. This New Baltimore Bypass is identified in the Fauquier County Comprehensive Plan and is desirable to improve the safety of the highway design.

West of New Baltimore, the north bypass option would generally follow the existing road alignment with widening along the north side. Fauquier County has generally restricted development to the south side of Route 29 to preserve the ability to widen Route 29 to the north.

Under all other options (Route 29 designation on I-66, short north bypass, existing alignment) Route 29 would be on the existing alignment west of Gainesville. Improvements to the existing road west of Gainesville in Prince William County have the potential for significant impacts to land use developments along the existing alignment. In particular segment C1e could potentially impact a number of community resources. In addition, improvements to the existing road through the Buckland Historic District have a high potential to impact the historic area.

APPENDIX

APPENDIX A

**Resolution by the Prince William Board of County Supervisors
Resolution by the Fauquier County Board of Supervisors
Recommendations of the Western Transportation Corridor Advisory Committee**

MOTION: WILBOURN

**November 18, 1997
Regular Meeting
Res. No. 97-907**

SECOND: MCQUIGG

RE: VDOT ROUTE 29 RELOCATION STUDY

ACTION: APPROVED

WHEREAS, Virginia Department of Transportation (VDOT) is currently conducting an analysis of Route 29 between Warrenton and the District of Columbia, including several alternatives for the relocation of Route 29 in the vicinity of Manassas National Battlefield Park; and

WHEREAS, VDOT may or may not continue to the next phase of study; and

WHEREAS, the Prince William Board of County Supervisors wants to ensure that a complete and thorough set of alternatives are considered by VDOT;

NOW, THEREFORE, BE IT RESOLVED that the Prince William Board of County Supervisors does hereby request that, if VDOT decides to continue its Route 29 relocation study, then the following options be considered for further study, after appropriate public participation:

- The "northern alignment" recommended by the VDOT consultant.
- The "no build" option recommended by the VDOT consultant.
- The "I-66" option recommended by the VDOT consultant.
- The option which utilizes segment A5a, A4b, A1e, A1F, A1G of the Route 29 corridor development study and is consistent with Segment 7 of the Western Transportation Corridor Study. This segment should be connected to the Tri-County Parkway (Segment A1f) north of the Manassas National Battlefield, taking into account the impact on historical lands, residential communities west and east of the Powerline, and the environment.

BE IT FURTHER RESOLVED that if VDOT chooses to continue to the next phase of the study, the Prince William Board of County Supervisors requests all information available regarding the alignments in Prince William County that were not considered for further analysis;

November 18, 1997

Regular Meeting

Res. No. 97-907

Page Two

BE IT FURTHER RESOLVED that the Prince William Board of County Supervisors does hereby declare its policy that the current locations of the Route 234 Bypass North and Route 29, as shown in the Comprehensive Plan, shall remain in force until they are replaced with new locations which are subjects of approved Environmental Impact Studies (EIS) and an amendment to the Prince William County Comprehensive Plan;

BE IT FURTHER RESOLVED that the Board authorizes its Chairman as its spokesperson to transmit the County's position on this matter to VDOT and other appropriate entities.

Votes:

Ayes: Barg, Caddigan, Jenkins, McQuigg, Seefeldt, Thompson, Wilbourn

Nays: Hill

Absent from Vote: None

Absent from Meeting: None

CERTIFIED COPY

Phillip J. Campbell
Clerk to the Board

RESOLUTION

A RESOLUTION TO ENDORSE THE 'WIDEN EXISTING ROUTE 29' ALTERNATIVE OF THE U.S. ROUTE 29 CORRIDOR DEVELOPMENT STUDY - WARRENTON TO CENTREVILLE

WHEREAS, BRW, Inc. prepared for the Virginia Department of Rail and Public Transportation and the Virginia Department of Transportation a Draft Report (October 14, 1997) titled ROUTE 29 CORRIDOR DEVELOPMENT STUDY - Warrenton to Centreville, Virginia (the "Study"); and

WHEREAS, a copy the aforesaid Study was hand delivered to the Fauquier County Administrative Offices on Thursday, 23 October 1997; and

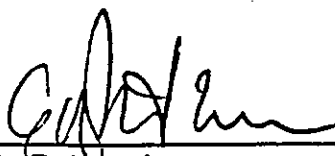
WHEREAS, Chairman Mangum and Supervisor Weeks have reviewed the Study, which is still designated as a Draft: and

WHEREAS, the Study identifies alternative courses of action pertaining to the Route 29 Corridor including: No-build; Widen Existing Route 29; Relocate Route 29 on I-66; South Bypass; North Bypass; and

WHEREAS, the 'Widen Existing Route 29' option appears to best meet the land use plans for Fauquier County; now, therefore, be it

RESOLVED, this 4th day of November 1997 by the Fauquier County Board of Supervisors, That the 'Widen Existing Route 29' corridor alignment reflected in the Draft U.S. ROUTE 29 CORRIDOR DEVELOPMENT STUDY - Warrenton to Centreville, Virginia be, and is hereby, endorsed.

A Copy Teste:



G. Robert Lee
County Administrator

Resolution as adopted by the Advisory Committee on the Western Transportation Corridor:

WHEREAS, a Major Investment Study (MIS) was initiated in June, 1995, by the Commonwealth Secretary of Transportation to study the need for, and effects of, transportation improvements in the western portion of the Northern Virginia region;

WHEREAS, in accordance with Senate Joint Resolution 35 the Commonwealth Secretary of Transportation established this Advisory Committee in February, 1996, to guide this MIS, which is being conducted by a study team under contract to the Virginia Department of Transportation, and to provide to the Secretary of Transportation a recommendation regarding the MIS results and findings;

WHEREAS, this Committee has studied the extensive MIS reports and the Committee members have carefully considered the views of their constituents in the five counties most concerned;

WHEREAS, in the Western Transportation Corridor ("WTC") Study area by the year 2020, compared to 1990 totals, population growth is projected to increase by 114 percent and employment growth is projected to increase by 148 percent;

WHEREAS, based on local land use and transportation plans, this population and employment growth will likely lead to increased congestion on primary and local service roads and a need for additional traffic capacity;

WHEREAS, by the year 2020, compared to 1990, north-south travel within Northern Virginia is expected to increase by 60 percent, and north-south travel between Loudoun and Prince William Counties is expected to increase by over 200 percent;

WHEREAS, the increased growth in population and employment in the WTC Study area will lead to greatly increased use and demand on passenger and cargo services at Washington Dulles International Airport;

WHEREAS, evaluation of the WTC Study area has found the need for improved north-south linkages for commuters and improved access to Dulles Airport, particularly from the south and west;

WHEREAS, the Board of Directors of the Metropolitan Washington Airports Authority : on December 4, 1996 adopted Resolution No. 96-12, a copy of which is attached, endorsing the selection of a "build option" for the WTC on a new alignment as soon as possible;

WHEREAS, adequate regional planning requires that transportation access and options between I-95 in Stafford County and activity centers to the north, particularly Dulles Airport, be preserved;

WHEREAS, a public information participation meeting was held to present the findings of the MIS for the WTC on November 13, 1996 at the Stonewall Jackson High School in Prince William County; on November 14, 1996 at the Stafford Senior High School in Stafford County; on November 20, 1996 at the Liberty High School in Fauquier County; and on November 21, 1996 at the Farmwell Station Middle School in Loudoun County, to take oral and written comments from the public, which were compiled into a transcript of these proceedings;

WHEREAS, this Committee met in December 1996 and recommended further consideration of a New Facility, of the Consultants' and VDOT staff studies and comments, of Segments 5, 7 and 9 and the elimination from further study of Segments 4, 6, 8 and 10 of the MIS;

WHEREAS, this Committee further recommended additional analysis of an alternative corridor located in the area that borders the United States Marine Corps Base at Quantico and Stafford County, and such analysis was presented to a public information participation meeting for consideration on August 5, 1997, at which public comment was taken;

WHEREAS, the U.S. Marine Corps has indicated a "conceptual alignment" developed by VDOT was "not doable" as proposed without mitigation, thereby indicating the need to move towards the development of an Environmental Impact Statement ("EIS"), and phases for specific locations in which necessary and requested mitigation could be identified;

WHEREAS, the U.S. Marine Corps has indicated that their guidelines for and acceptable alignment could be summarized as:

- * No net loss for training opportunities at the Marine Corps Base on air or ground;
- * No additional cost to the Marine Corps;
- * No growth along the WTC that encroaches on the Marine Corps Base and its training mission;
- * No increase in Marine Corps Environmental Compliance liability;
- * Marine Corps retain ownership of land within its current boundaries;
- * Full compliance with all Department of Defense/Department of the Navy policies on environment and land use;
- * All-non-monetary impacts should be mitigated to the lowest level possible;

WHEREAS, Fauquier and Stafford Counties have indicated their willingness to amend their County Comprehensive Plans to include a 1,500-foot military impact overlay district along their boundaries with the Quantico Marine Base should that prove of interest to the U.S. Marine Corps as the more detailed study process unfolds;

NOW, THEREFORE, BE IT RESOLVED BY THIS ADVISORY COMMITTEE THAT:

1. This Committee opposes New Facility Segments 1 and 2 in Stafford County, and

recommends study of a New Facility Segment to identify a connection between I-95 and New Facility Segment 3 at the Prince William/Fauquier County boundary through environmental (EIS) and design processes, with the intent to pursue an alignment in the vicinity (if not wholly within) the perimeter of the Quantico Marine Base in accordance with the processes mentioned;

2. There be a connection to Segment 3A and the Fauquier/Prince William County boundary, Segments 3, 5 and 7 in Prince William County, which essentially follows the power line easement, and Segment 9 within Loudoun County, and for purposes of detailed study, extending Segment 9 north of Route 7 to the Potomac River;

3. The future study of the New Facility alignment consider the sensitivity to existing development, agricultural lands, historic properties including the Manassas National Battlefield Park and the natural environment;

4. This Committee recommends that the New Facility be a limited access parkway-style facility usable by trucks, and that future study determine the right of way, financing options and timing of construction;

5. The Commonwealth of Virginia is hereby requested to continue discussions with Maryland state and local officials to include study of a new Potomac River crossing that would connect to the New Facility, Segment 9, in Loudoun County in recognition of the growing needs to provide an alternative to Route 15 for the increasing volume of north-south traffic in general, and in particular for a new river crossing east of Leesburg to serve the growing volume of Maryland and interstate traffic passing through Loudoun County;

6. This Committee recommends that U.S. Highway 15 north of Leesburg remain a two-lane highway;

7. VDOT is requested to assess local traffic needs in Leesburg associated with Cross Trail Boulevard, River Creek Parkway and their realignment;

8. No alignment be located through the historic Ball's Bluff National Cemetery and its surrounding park;

9. For the purposes of further detailed study in Prince William County; considerable latitude be allowed in Segment 7 near the Manassas Battlefield National park, and that Segment 7 be expanded further east to include the area of the Route 29 Bypass (Battlefield Bypass) VDOT MIS study, taking into account the impact on historical lands, residential communities west and east of the power line, and the environment;

10. Segment 5 avoid residential areas as much as possible, and act as a buffer between the Linton Hall residential area and the industrial corridor with particular attention to the recommendations of the Prince William County "Western Transportation Corridor Mitigation

Committee; and,

BE IT FURTHER RESOLVED that the Commonwealth of Virginia is requested to reconfirm its standing position in support of additional study of an Eastern Bypass around Washington, D.C.; and,

BE IT FURTHER RESOLVED that the Commonwealth Transportation Board is requested to direct VDOT to narrow the corridor through the EIS process and to expedite location efforts as much as possible in recognition of the anxiety neighborhoods may feel as to whether they ultimately will be directly impacted by the New Facility.

September 5, 1997

APPENDIX B

Listing of Hazardous Material Sites and Locations

**TABLE B1
HAZARDOUS MATERIAL SITES AND LOCATIONS**

HAZ PT ID	SEGMENT	DATA ID	NAME	ADDRESS	CITY	ZIP	COUNTY
690335	a1f	2	CENTREVILLE LANDSCAPING INC	6639 BULL RUN P.O. RD.	CENTREVILLE	22020	FAIRFAX
5391750	a1h	10	BELL ATLANTIC - VA 74092	14615 LEE HWY	CENTREVILLE	22021	FAIRFAX
22775	a2b	3	ANNANDALE MILLWORK CORP.	8612 JAMES MADISON HIGHWAY	HAYMARKET		PRINCE WILLIAM
4567342	a2b	3	QUARRELS PETROLEUM	RT. 15 & RT. 50	HAYMARKET		PRINCE WILLIAM CO.
4567382	a2b	3	TRANSPORTATIO COMMERCIAL FACTORS	RT. 15 & RT. 55	HAYMARKET		PRINCE WILLIAM CO.
5330359	a2b	3	PHARES/SHEETZ PROPERTY (FORMERLY	RT. 55 & RT. 15	HAYMARKET		PRINCE WILLIAM
5330360	a2b	3	PHARES PROP (ORNDORFF SITE)-MIFCO	RT. 55 AND RT. 15	HAYMARKET		PRINCE WILLIAM
4199531	a2d	10	COLORS BY JB	5305 PAGE LAND LN	CATHARPIN	22018	PRINCE WILLIAM
695248	c1e	2	JONES SAMUEL M	14505 LEE HWY.	GAINESVILLE	22065	PRINCE WILLIAM
697980	c1e	2	L-24 PUMPING STATION E	14595 LEE HWY.	GAINESVILLE	22065	PRINCE WILLIAM
697983	c1e	2	L-25 PUMPING STATION F	15401 LEE HWY.	GAINESVILLE	22065	PRINCE WILLIAM
1570765	c1e	2	GAINESVILLE HEADQUARTERS	14831 LEE HWY.	GAINESVILLE	22065	PRINCE WILLIAM
4568524	c1e	3	PRINCE WILLIAM CO. SERVICE AUTHORITY	STATION #L24, 14595 LEE HWY.	GAINESVILLE		PRINCE WILLIAM CO.
5329761	c1e	3	PWCSA	14595 LEE HIGHWAY	GAINESVILLE		PRINCE WILLIAM
5383352	c1e	10	GAINESVILLE AREA HEADQUARTERS	14831 LEE HWY	GAINESVILLE	22065	PRINCE WILLIAM
146353	c1f	2	EXXON S/S #2-5484	14006 LEE HWY.	GAINESVILLE	22065	PRINCE WILLIAM
692010	c1f	2	EMBREY JOSEPH W & NORA	14407 LEE HWY.	GAINESVILLE	22065	PRINCE WILLIAM
700231	c1f	10	7-ELEVEN #30485	14203 LEE HWY	GAINESVILLE	22065	PRINCE WILLIAM
2892353	c1f	3	RACE TRAC PETROLEUM (#312)	14105 LEE HIGHWAY	GAINESVILLE		PRINCE WILLIAM
3381217	c1f	3	FAST FABRICATORS	14218 LEE HWY.	GAINESVILLE		PRINCE WILLIAM CO.
3387559	c1f	2	RACE TRACK	14106 LEE HWY	GAINESVILLE	22065	PRINCE WILLIAM
3387560	c1f	2	A&P WATER & SEWER SUPPLY	14218 LEE HWY	GAINESVILLE	22065	FAUQUIER
3387561	c1f	2	PARKS WELDING	14221 LEE HWY.	MANASSAS	22110	PRINCE WILLIAM
3387562	c1f	3	LIST PROPERTY	14397 LEE HIGHWAY	GAINESVILLE		PRINCE WILLIAM
4565435	c1f	3	RACEWAY #312	14105 LEE HWY	GAINESVILLE		PRINCE WILLIAM CO.
4565437	c1f	3	J.W. BURRUSS COMPANY	14221 LEE HIGHWAY	GAINESVILLE		PRINCE WILLIAM
30895	c1g	14	ATLANTIC RESEARCH CORP	5945 WELLINGTON RD	GAINESVILLE	22065	PRINCE WILLIAM
358775	c1g	10	RODGERS, S W CO INC	7606 WELLINGTON RD	GAINESVILLE	22065	PRINCE WILLIAM
694997	c1g	2	BETCO BLOCK & PRODUCTS INC	7305 WELLINGTON ROAD	GAINESVILLE	22065	PRINCE WILLIAM
702338	c1g	2	ARAS MACHINE & IRON WORKS INC	7308 WELLINGTON RD.	GAINESVILLE	22065	PRINCE WILLIAM
1559817	c1g	10	COMING ATTRACTION LTD	7014 WELLINGTON RD	MANASSAS	22110	PRINCE WILLIAM
1572675	c1g	10	S W RODGERS CO INC	5816 WELLINGTON RD	GAINESVILLE	22065	PRINCE WILLIAM
2745552	c1g	2	NOVEC-GAINESVILLE DISTRICT OFF	5399 WELLINGTON RD.	GAINESVILLE	22065	PRINCE WILLIAM
2745553	c1g	2	GAINESVILLE FACILITY	5945 WELLINGTON ROAD	GAINESVILLE	22065	PRINCE WILLIAM
5383590	c1g	9	RUPPERT LANDSCAPING CO INC	5451 WELLINGTON RD	GAINESVILLE	22065	PRINCE WILLIAM
5690171	c1g	10	SUPERIOR PAVING CORP	5525 WELLINGTON RD	GAINESVILLE	22065	PRINCE WILLIAM
200074328	c1g	13	ATLANTIC RESEARCH CORP	5945 WELLINGTON RD	GAINESVILLE		PRINCE WILLIAM
200373070	c1g	13	ANDERSON TRUCKING	5513 WELLINGTON RD	GAINESVILLE	22065	PRINCE WILLIAM
699999	c1g & c3a	10	SUBURBAN PROPANE FLEET MAINT	14111 JOHN MARSHALL HWY	GAINESVILLE	22065	PRINCE WILLIAM
1557197	c1g & c3a	10	BRINCEFIELD GLEN C	14000 JOHN MARSHALL HWY	GAINESVILLE	22065	PRINCE WILLIAM
3381140	c1g & c3a	3	SHELL STATION	13715 OLD LEE HIGHWAY	GAINESVILLE		PRINCE WILLIAM
3387555	c1g & c3a	3	EXXON #2-5482	13705 LEE HIGHWAY	GAINESVILLE		PRINCE WILLIAM
3387556	c1g & c3a	2	GAINESVILLE MOBIL	13713 LEE HIGHWAY	GAINESVILLE	22065	PRINCE WILLIAM
4566232	c1g & c3a	3	MOBIL	13713 OLD LEE HWY	GAINESVILLE		PRINCE WILLIAM
702638	c3c	2	CENTREVILLE CONCRETE CORP	7310 OLD COMPTON RD.	MANASSAS	22110	PRINCE WILLIAM
278946	c3d	3	MOBIL OIL TERMINAL	10315 BALLS FORD RD.	MANASSAS		PRINCE WILLIAM CO.
408718	c3d	3	SUNOCO STATION (#011-8398)	7203 SUDLEY ROAD	MANASSAS		PRINCE WILLIAM
421997	c3d	10	TGPL STATION 0185	10201 BALLS FORD RD	MANASSAS	22110	MANASSAS
688478	c3d	2	DOMINION WELL CO INC	10335 BALLS FORD RD.	MANASSAS	22110	PRINCE WILLIAM
1572255	c3d	2	EXXON S/S #2-6977	7113 SUDLEY RD.	MANASSAS	22110	PRINCE WILLIAM
3726303	c3d	10	BASYES RESTORATIONS	7563 GARY RD	MANASSAS	22110	PRINCE WILLIAM
4836294	c3d	10	CARBURETORS UNLIMITED INC	10369 BALLS FORD RD	MANASSAS	22110	PRINCE WILLIAM
364111	c5b	3	RYDER TRUCK RENTAL	12091 BALLS FORD ROAD	MANASSAS		PRINCE WILLIAM
686547	c5b	2	CULBERTSON CO OF VIRGINIA	12923 BALLS FORD ROAD	MANASSAS	22110	PRINCE WILLIAM
688110	c5b	2	CRIB N CRADLE	7900 NOTES DR.	MANASSAS	22110	PRINCE WILLIAM
688827	c5b	2	SOUTHERN FLOORS & ACOUSTICS INC	12004 BALLS FORD RD	MANASSAS	22110	PRINCE WILLIAM
690105	c5b	2	D&M TRUCKING INC	7911 NOTES DRIVE	MANASSAS	22110	PRINCE WILLIAM
690159	c5b	2	UNITED MATERIALS & SERVICE INC	7500 MASON KING CT.	MANASSAS	22110	PRINCE WILLIAM
690467	c5b	2	CEDAR SHAKES & SHINGLES INC	7901 NOTES DRIVE	MANASSAS	22110	PRINCE WILLIAM
690963	c5b	2	GEORGIA-PACIFIC CORP	11801 BALLS FORD RD.	MANASSAS	22110	PRINCE WILLIAM
1569621	c5b	2	THE MARTIN-BROWER CO	11777 BALLS FORD RD.	MANASSAS	22110	PRINCE WILLIAM
1569977	c5b	3	UNITED CONCRETE PRODUCTS	7600 CUSHING	MANASSAS		PRINCE WILLIAM
5802642	c5b	12	SAFETY-KLEEN CORP	11530 BALLS FORD RD	MANASSAS	22110	PRINCE WILLIAM

DATABASES IDENTIFIED FOR THE ROUTE 29 STUDY

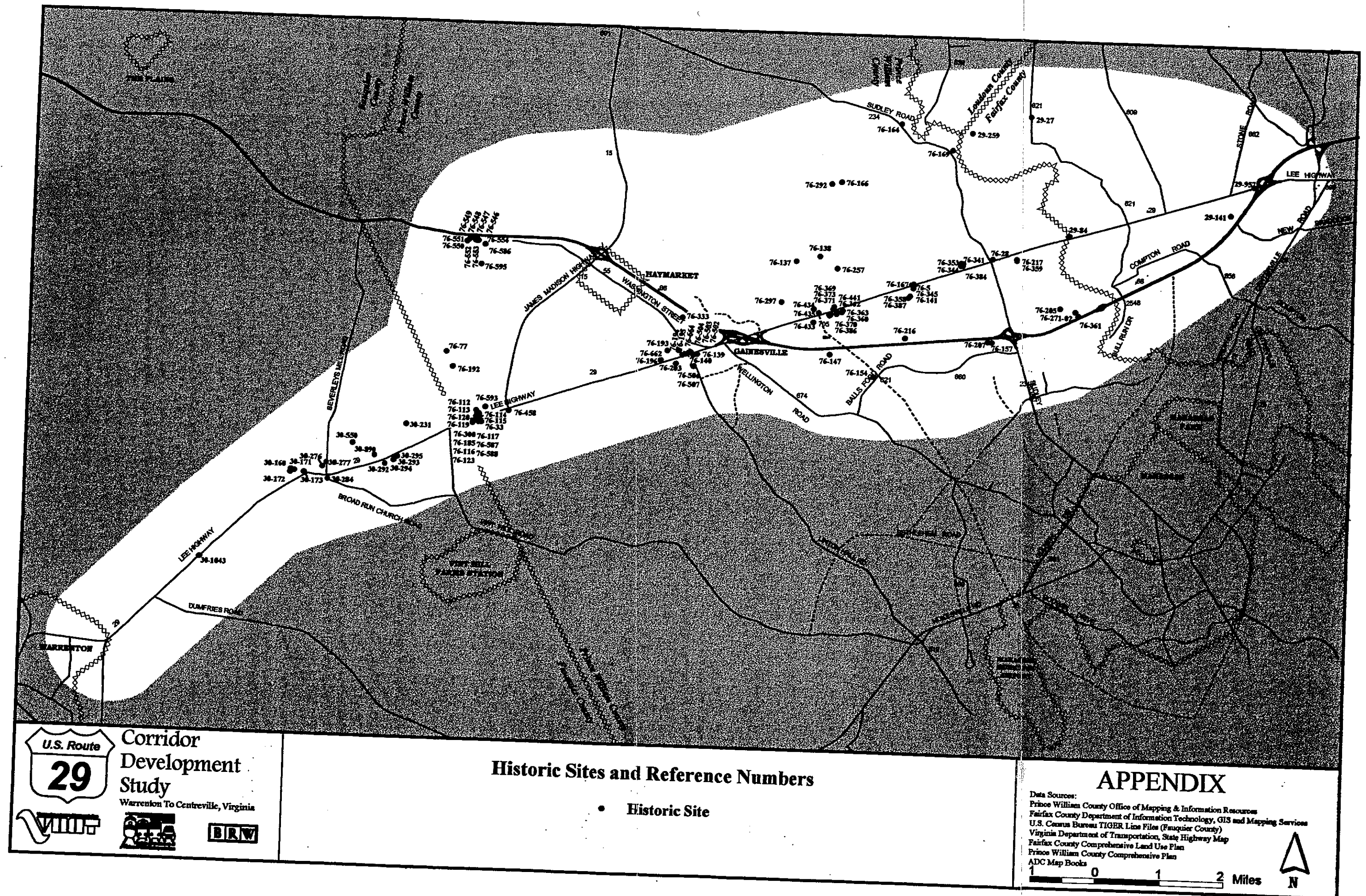
- UST:** This database, provided by the Virginia Department of Environmental Quality, will identify registered Underground Storage Tanks. CAUTION: Many states do not require registration of heating oil tanks, especially those used for residential purposes.
- LUST:** This database, provided by the Virginia Department of Environmental Quality - Water Division, will identify Leaking Underground Storage Tanks.
- RCRA Large Generators:** The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Large Generators are facilities which generate at least 1000 kg./month of non-acutely hazardous waste (or 1 kg./month of acutely hazardous waste).
- RCRA Small Generators:** The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Small and Very Small generators are facilities which generate less than 1000 kg./month of non-acutely hazardous waste.
- RCRA Transportation:** The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. The RCRA Transportation identifies businesses or facilities that transport hazardous waste and have been authorized to do so.
- ERNS:** The Emergency Response Notification System (ERNS) is a national database used to collect information of reported releases of oil and hazardous substances. The database contains information from spill reports made to federal authorities including the EPA, the US Coast Guard, the National Response Center and the Department of Transportation.
- CORRACTS:** The EPA maintains this database of RCRA facilities which are undergoing "corrective action". A "corrective action order" is issued pursuant to RCRA section 3008 (h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility's boundary and can be required regardless of when the release occurred, even if it predates RCRA.

APPENDIX C

Listing of Historic Resources and Map of Historic Sites

TABLE C1
HISTORIC RESOURCES

COUNTY	PROPERTY NAME	ELIGIBILITY	USGS QUAD	SITE	IN DISTRICT	DATE	REFERENCE
29	Newton's Mill Ruins	Not Evaluated	Manassas 4 of 4	141		ca 1750-60	29-141
29	Royal Oaks	Not Evaluated - out of study	Manassas 4 of 4	32		pre 1832	29-32
29	House	Not Evaluated - out of study	Manassas 3 of 4	561		ca 1937	29-561
29	House	Not Evaluated - out of study	Manassas 3 of 4	563		ca 1940	29-563
29	Sudley (no file)	Not Evaluated	Gainsville 1 of 2	259			29-259
29	Mountain View (ruins)	Not Evaluated	Gainsville 1 of 2	27		ca 1755	29-27
76	Mt. Calvary Church	Not Eligible	Gainsville 1 of 2	164		1920s	76-164
76	Sudley Springs Hotel Site	Not Evaluated	Gainsville 1 of 2	169		1850	76-169
76	J. Robinson House	Contributing	Gainsville 1 of 2	217	Manassas National Battlefield	ca 1828	76-217
76	Stone House	Contributing	Gainsville 1 of 2	28	Manassas National Battlefield	ca 1828	76-28
76	Dogan House	Contributing	Gainsville 1 of 2	5	Manassas National Battlefield	early-mid 19th century	76-5
76	M.E. Dogan House	Not Evaluated	Gainsville 1 of 2	187		ca 1880	76-187
76	Willow Green Stone Accessory	Not Eligible	Gainsville 1 of 2	157		1801	76-157
76	Brownsville	Not Evaluated	Gainsville 1 of 2	216		ca 1899	76-216
76	Monroe House	Determined Eligible	Gainsville 1 of 2	147		ca 1890	76-147
76	Willow Green	Not Evaluated	Gainsville 1 of 2	207		1790	76-207
76	Wellington Cannery / Grassland Canning Co.	Not Eligible	Gainsville 1 of 2	154		1925	76-154
76	Pattie Cemetery and House	Not Eligible	Gainsville 1 of 2	166		1860 / 80	76-166
76	Haislip Cemetery and House	Not Evaluated	Gainsville 1 of 2	292		ca 1850	76-292
76	House	Not Evaluated	Gainsville 1 of 2	435		ca 1940	76-435
76	House	Not Evaluated	Gainsville 1 of 2	434		ca 1900	76-434
76	House	Not Evaluated	Gainsville 1 of 2	333		ca 1880	76-333
76	Honeywood	Not Evaluated	Gainsville 1 of 2	138		ca 1840	76-138
76	Conway Robinson St. Forest	Not Evaluated	Gainsville 1 of 2	297		1938	76-297
76	Pageland Farm II	Not Evaluated	Gainsville 1 of 2	137		ca 1855	76-137
76	Site of Ex-Slave House	Demolished	Gainsville 1 of 2	257	Manassas National Battlefield		76-257
76	Groveton School	Not Evaluated	Gainsville 1 of 2	141		ca 1917	76-141
76	Hillcrest Farm	Not Evaluated	Gainsville 1 of 2	193		1903	76-193
76	House	Not Evaluated	Gainsville 1 of 2	504		1910	76-504
76	R.H. Florance House	Not Evaluated	Gainsville 1 of 2	140		ca 1910	76-140
76	House	Not Evaluated	Gainsville 1 of 2	662		ca 1880	76-662
76	Fanny Harrison House	Not Evaluated	Gainsville 1 of 2	198		ca 1880	76-198
76	House, Route 29	Not Evaluated	Gainsville 1 of 2	503		ca 1940	76-503
76	Davis House	Not Evaluated	Gainsville 1 of 2	195		ca 1880	76-195
76	House, Route 619	Not Evaluated	Gainsville 1 of 2	506		ca 1930	76-506
76	Florance Dunbar House	Not Evaluated	Gainsville 1 of 2	139		ca 1880	76-139
76	House, Route 169	Not Evaluated	Gainsville 1 of 2	507		ca 1930	76-507
76	Methodist Parsonage	Not Evaluated	Gainsville 1 of 2	194		ca 1880	76-194
76	House	Not Evaluated	Gainsville 1 of 2	664		ca 1910	76-664
76	Jacquess - Triplett House	Not Evaluated	Gainsville 1 of 2	203		ca 1880	76-203
76	House	Not Evaluated	Gainsville 1 of 2	433		ca 1880	76-433
76	House	Not Evaluated	Gainsville 1 of 2	501		ca 1930	76-501
76	Store at Gainsville	Not Evaluated	Gainsville 1 of 2	502		ca 1920	76-502
76	Quarters 5 Hasha	Not Eligible	Gainsville 2 of 2	353	Manassas National Battlefield	1981	76-353
76	Robinson House Shed	Not Determined	Gainsville 2 of 2	359	Manassas National Battlefield	?	76-359
76	Quarters 5 Garage	Not Eligible	Gainsville 2 of 2	384	Manassas National Battlefield	ca 1990	76-384
76	Quarters 11	Not Eligible	Gainsville 2 of 2	381	Manassas National Battlefield	ca 1990	76-381
76	Portici Site	Contributing	Gainsville 2 of 2	205	Manassas National Battlefield	ca 1811	76-205
76	Quarters 10 Chicken Coop	Not Eligible	Gainsville 2 of 2	387	Manassas National Battlefield	ca 1914	76-387
76	Quarters 10	Not Eligible	Gainsville 2 of 2	358	Manassas National Battlefield	ca 1914	76-358
76	Bladen / Oswald / Robinson House	Not Eligible	Gainsville 2 of 2	345	Manassas National Battlefield	1962	76-345
76	Quarters 5 Tin Shed	Not Eligible	Gainsville 2 of 2	341	Manassas National Battlefield	1937	76-341
76	Quarters 5 Wooden Shed	Not Eligible	Gainsville 2 of 2	344	Manassas National Battlefield	ca 1990	76-344
76	Shed Near Dunn House	Not Eligible	Gainsville 2 of 2	360	Manassas National Battlefield	unknown	76-360
76	Barn near Dunn House	Not Eligible	Gainsville 2 of 2	363	Manassas National Battlefield	unknown	76-363
76	Dunn House Shed	Not Eligible	Gainsville 2 of 2	386	Manassas National Battlefield	1970s	76-386
76	Shed, Pageland and Route 29	Not Eligible	Gainsville 2 of 2	362	Manassas National Battlefield	ca 1900	76-362
76	White Oak Nurseries Garage / Storage Buidin	Not Eligible	Gainsville 2 of 2	371	Manassas National Battlefield	1978	76-371
76	White Oak Nursery - Main Complex	Not Eligible	Gainsville 2 of 2	369	Manassas National Battlefield	1978	76-369
76	White Oak Nurseries - Tractor Shed	Not Eligible	Gainsville 2 of 2	373	Manassas National Battlefield	unknown	76-373
76	Dunn House	Not Eligible	Gainsville 2 of 2	370	Manassas National Battlefield	post 1945	76-370
76	Swart Family Cemetery	Contributing	Gainsville 2 of 2	441	Manassas National Battlefield	1907	76-441
30	Grant House	Not Evaluated	Thoroughfare Gap 2 of 2	173		early 19th century	30-173
30	Old Store	Not Evaluated	Thoroughfare Gap 2 of 2	172		19th century	30-172
30	Balls Inn	Determined Eligible	Thoroughfare Gap 2 of 2	160		ca 1830	30-160
30	Lundford House	Not Evaluated	Thoroughfare Gap 2 of 2	171		19th century	30-171
30	Eastview	Not Evaluated	Thoroughfare Gap 2 of 2	276		ca 1840	30-276
30	Eastview	Not Evaluated	Thoroughfare Gap 2 of 2	550		ca 1820	30-550
30	Evergreen	Not Evaluated	Thoroughfare Gap 2 of 2	890		1800 / 1900	30-890
30	Joel R. Garreau House	Not Evaluated	Thoroughfare Gap 2 of 2	231		ca 1820	30-231
76	Gough-Log Barn	Not Evaluated	Thoroughfare Gap 2 of 2	300		?	76-300
76	Fletcher House / Hawley House	Contributing	Thoroughfare Gap 2 of 2	119	Buckland Historic District	ca 1830	76-119
76	Hemdon House	Contributing	Thoroughfare Gap 2 of 2	117	Buckland Historic District	ca 1900	76-117
76	John Trone House	Contributing	Thoroughfare Gap 2 of 2	123	Buckland Historic District	ca 1825	76-123
76	Buckland Church	Contributing	Thoroughfare Gap 2 of 2	116	Buckland Historic District	ca 1857	76-116
76	Buckland Tavern	Contributing	Thoroughfare Gap 2 of 2	33	Buckland Historic District	ca 1825	76-33
76	Buckland Mill	Contributing	Thoroughfare Gap 2 of 2	112	Buckland Historic District	1899	76-112
76	Dr. Brown House	Contributing	Thoroughfare Gap 2 of 2	115	Buckland Historic District	ca 1825	76-115
76	Deerick Cottage	Contributing	Thoroughfare Gap 2 of 2	114	Buckland Historic District	ca 1800	76-114
76	Moss House / Calvert House	Contributing	Thoroughfare Gap 2 of 2	120	Buckland Historic District	ca 1825	76-120
76	Miller's House	Contributing	Thoroughfare Gap 2 of 2	113	Buckland Historic District	ca 1800	76-113
76	Falkland Tenant House	Not Evaluated	Thoroughfare Gap 2 of 2	192		ca 1880	76-192
76	Barn	Not Evaluated	Thoroughfare Gap 2 of 2	458		ca 1900	76-458
30	Quail Hollow	Not Evaluated	Thoroughfare Gap 1 of 2	277		n.d.	30-277
30	Broad Run Baptist Church	Not Eligible	Thoroughfare Gap 1 of 2	284		1765	30-284
30	Cosner Property	Not Evaluated	Thoroughfare Gap 1 of 2	292		1909	30-292
30	Terry House	Not Evaluated	Thoroughfare Gap 1 of 2	294		1939	30-294
30	Rider House	Not Evaluated	Thoroughfare Gap 1 of 2	293		1928	30-293
30	Downs house	Not Evaluated	Thoroughfare Gap 1 of 2	295		ca 1940s	30-295
76	House, 8203 Buckland Mills Road	Contributing	Thoroughfare Gap 1 of 2	588	Buckland Historic District	ca 1890	76-588
76	House, 8201 Buckland Mills Road	Contributing	Thoroughfare Gap 1 of 2	587	Buckland Historic District	ca 1890	76-587
76	Graham - Odescaid House	Contributing	Thoroughfare Gap 1 of 2	185	Buckland Historic District	1825 / 90	76-185
76	House	Not Evaluated	Thoroughfare Gap 1 of 2	595		ca 1900	76-595
76	Falkland	Not Evaluated	Thoroughfare Gap 1 of 2	77		1844	76-77
76	House, Thoroughfare	Not Evaluated	Thoroughfare Gap 1 of 2	552		ca 1925	76-552
76	Cerro Gordo	Not Evaluated	Thoroughfare Gap 1 of 2	593		ca 1835	76-593
76	Store, Thoroughfare	Not Evaluated	Thoroughfare Gap 1 of 2	551		ca 1900	76-551
76	House, Beverly Road	Not Evaluated	Thoroughfare Gap 1 of 2	550		ca 1880	76-550
76	House, Thoroughfare	Not Evaluated	Thoroughfare Gap 1 of 2	548		ca 1830	76-548
76	House, Thoroughfare	Not Evaluated	Thoroughfare Gap 1 of 2	547		ca 1900	76-547
76	House, Thoroughfare	Not Evaluated	Thoroughfare Gap 1 of 2	548		ca 1900	76-548
76	Store, Thoroughfare	Not Evaluated	Thoroughfare Gap 1 of 2	549		ca 1920	76-549
76	House, Thoroughfare	Not Evaluated	Thoroughfare Gap 1 of 2	553		ca 1890	76-553
76	House, Thoroughfare	Not Evaluated	Thoroughfare Gap 1 of 2	554		ca 1900	76-554
76	House	Not Evaluated	Thoroughfare Gap 1 of 2	586		ca 1900	76-586
30	Bridge (no file)	Not Evaluated	Warrenton (new)	1043			30-1043
29	Bridge (no file)	Not Evaluated	Manassas (new)	957			29-957
29	Stone Bridge	Contributing	Gainsville 1 of 2	84	Manassas National Battlefield	1820s	29-84
76	Portici	Not Eligible	Gainsville 1 of 2	271	Manassas National Battlefield	ca 1875	76-271-02



APPENDIX D

Summary of Comments Received

January 27, 1997 Public Information Meeting
January 8, 1998 Public Information Meeting

Summary of Written Comments through February 14, 1997
Route 29 Corridor Development Study
Warrenton to Cenreville

COMMENTS	FREQUENCY
Relocate Route 29 out of Manassas Battlefield Park.	13
No need to relocate Route 29 out of Manassas National Battlefield Park.	53
Designate Route 29 on I-66.	63
Do not merge Route 29 with I-66. Route 29 serves as an alternate to I-66 when I-66 is at full capacity.	5
Upgrade Route 29 west of park (study first to see if there is a need).	10
Upgrade Route 29 west of Gainesville (study first to see if there is a need).	20
Upgrade Route 29.	4
No need to upgrade Route 29 west of park.	18
Widen/Upgrade Route 29 through park area to alleviate bottleneck and to be consistent with traffic flow at each end. Make it a scenic highway.	17
Widening I-66 to Centreville has improved the flow of traffic greatly. Traffic on Route 29 is not as heavy as it was in the past.	8
Alternative locations for Route 29 will be tax dollars spent for little or no benefit to local commuters and residents.	32
Alternative locations for Route 29 appear to be based on developers' needs/wants.	5
Build 234 Bypass and Tri County Parkway.	20
Allow only local and park traffic to use the two lane existing road through the park.	7
Close off the Manassas Battlefield.	1
Need more coordination with other studies in region.	7
In favor of a South Bypass.	21
Prefer South Bypass near Balls Ford Road.	2
In favor of a North Bypass.	1
In favor of the North Bypass candidate alignment with the shortest, southernmost branches. Route 29 through the park can be dangerous with so many people slowing down to look and others driving with intent--it is a volatile situation.	1
In favor of a North Bypass with restricted access east of Gainesville.	1

Summary of Written Comments through February 14, 1997
Route 29 Corridor Development Study
Warrenton to Cenreville

COMMENTS	FREQUENCY
Prefer North Bypass on the James Madison Highway but to terminate relocation in historic district would destroy the historic mile in Buckland.	3
Prefer Northern Bypass, Rt. 28 to I-66 and stop at I-66.	1
Opposed to alignments running north and west because of environmental impacts, historic resources, and residential developments.	14
Object to northernmost alternative. It goes through beautiful, unspoiled farmland.	2
Preserve farmland and woodlands.	3
Proposed realignments would disrupt brand new neighborhoods, well-established farms and the watershed supplying Lake Manassas.	2
Alternative locations create more unnecessary infrastructure through sensitive areas. Roads to the north of the park provide no traffic relief.	1
The northern alignment through Fauquier County violates the Fauquier County Comprehensive plan. It should be removed from further consideration.	1
Object to widening Route 29 through Village of Buckland--would be devastating to historic district.	2
Keep alternatives out of Lake Manassas/Buckland area.	4
Concerns about alternative locations for Route 29 include destruction of watersheds, farmlands, and vast housing developments.	5
Concerned that alternative locations for Route 29 would be disruptive to existing communities that have historic and environmental significance.	2
Concerned that alternative locations for Route 29 would have adverse effect on my property.	3
Concerned southern alignments alternatives would have adverse effect on my property.	1
Development inside Route 15 should be supported by road improvements inside Route 15.	3
Need left-turn lane at the intersection of Rt. 29 and Rt. 234.	3
To lessen traffic through battlefield install "no left turn" signs to coincide with peak periods.	4
Route 29 needs turning and deceleration lanes.	1

Summary of Written Comments through February 14, 1997
Route 29 Corridor Development Study
Warrenton to Cenreville

COMMENTS	FREQUENCY
Reduce speed through park to discourage use.	2
Widen current 29 by widening each lane about two feet and by selectively using adequate stack lanes, ramp overpasses and, for 29 east of Warrenton, underpasses at the intersections within two miles of the existing Warrenton bypass. Build a northerly or southerly bypass around Gainesville using an I-66 ramp east of Gainesville, rejoining 29 about five miles west.	1
Keep any new road right-of-way to a minimum.	1
Best options for realignment are the ones not recommended for further study. Compromise between "battlefield resources" and removing 29 from the center of the park.	1
Make provision for and plan for future rail station (VRE) in vicinity of Haymarket.	2
After build Western Bypass which includes rerouted US 15, eliminate light and dangerous turn from eastbound 29 to 15 north.	1
Any alternative routings accommodate possible extension of VRE commuter service to Gainesville, discussed in I-66 Corridor MIS. Commuter access from Route 29 to future commuter rail stop should be considered.	1
Would like to see rail routings superimposed on a revised map to see routing of existing railroad and proposed VRE extensions.	1
Prefer widening of Route 15.	1
Make 234 bypass eight lanes and use a Western Bypass.	1
The battlefield now only needs a viable bypass for Route 234 traffic. None of the proposed Route 29 bypass routes offer a solution better than the originally proposed alignment paralleling Pageland Lane.	1
Reroute Route 234 around and to the west of Manassas Battlefield to meet with Manassas Bypass.	1
New corridors are not necessary when all traffic will end up on I-66 approaching the beltway regardless of how it is routed.	1
Need reduction in development in western Prince William County to reduce need for additional roads.	1
Need greater expansion of mass transit in Prince William County.	1
Place travel restriction on I-66 east of Gainesville during rush hours for trucks.	1
Keeps trucks out of the Battlefield.	2

Summary of Written Comments through February 14, 1997
Route 29 Corridor Development Study
Warrenton to Cenreville

COMMENTS	FREQUENCY
Additional construction south of park and I-66 will result in greater traffic noise and pollution in the Sudley neighborhood.	1
Widen Route 234 to four lanes through the Battlefield.	1
Bypass should be combined with 234 Bypass and run to Tri County.	1
Bring Metro out to Gainesville.	1
Alternative just south of Battlefield and across Bull Run at Balls Ford violates the scenic easements under the 1980 battlefield expansion law.	1
On Route 29 in Fauquier County expand lanes inside existing easement.	1
Install stoplight at Vint Hill to slow traffic.	1
Eliminate HOV; it does not help the traffic problem.	1
Increase cheap mass transit (subway, train, bus) to Manassas, Gainesville, Leesburg, Sterling, Centreville, Dulles, Reston, Warrenton, and points in between.	1
Need a six-lane road from Warrenton to Rt. 28. Also need to connect between Rt. 29 and Rt. 28 north of Stone Rd. (Westfields Dr.) and south of Rt. 50.	1
An overpass for either road traffic or rail through Gainesville on Rt. 29 would also help ensure smoother traffic flow.	1
Fix the railroad crossing in Gainesville.	1
Widen 66 past Sudley Road.	1
Widen I-66 between Manassas and Gainesville.	1
Widen I-66	1
Has anyone walked these routes and used the Federal Historical Regional maps?	1
Make 234 a four-lane road from Rt. 29 south to I-66.	1
Investigate the possibility of continuing Rt. 29 on Rt. 66 to Beverlys Mill Road and then joining existing Rt. 29.	1
Run Rt. 29 in conjunction with Rt. 66 to Gainesville. Build an overpass across the railroad at Gainesville. Add extra lanes to I-66 from 234 to Gainesville.	1
Widen I-66 towards Marshall or farther.	1

Summary of Written Comments through February 14, 1997
Route 29 Corridor Development Study
Warrenton to Cenreville

COMMENTS	FREQUENCY
Maps available to the public are poor and difficult to read. Roads are not sufficiently labeled. No historic sites within 500 feet of the various proposed alignments were identified. There also was no information available on the impact on the Chesapeake Bay with building any new alignments.	1
Prefer option of Wellington Road to Balls Ford Road corridor. This option would help ease traffic in the Nissan Pavilion and also the planned shopping mall at the intersection of Rt. 29 and Linton Road. Also, that area is already zoned industrial. Any other options would destroy open land and homes.	1
The Bull Run and Catharpin Creek are an important part of the watershed for the Occoquan Reservoir and should be protected.	2
Use Rt. 234 to link up Rt. 29 bypass either north or south of Battlefield. Keep Rt. 29 bypass close to affected area, not miles west toward Warrenton. Utilize power line corridor.	1
Widen I-66 to just west of Haymarket (including HOV lanes). Then use westernmost alignment to build the "new" 29 south to Warrenton. There should be VRE service and/or Metro or Metro-like service to Haymarket. Extend 234 bypass north to 50. Rearrange Gainesville interchange.	1
Keep visual blight and strip development clutter from happening to Route 29. Use special Corridor Zoning--used by Leesburg to protect approaches to their historic district. Corridor development along Rt. 29 has the potential to be a model study and a model implementation of the current re-thinking about visual enhancement.	1

**Summary of Comments through January 18, 1998
Route 29 Corridor Development Study
Warrenton to Centreville**

A comment sheet (see attachment D) was distributed at the Public Information Meeting on January 8, 1998. Participants were encouraged to respond to one open-ended question which was:

Understanding the concerns of our customers is important to the Virginia Department of Transportation and the Department of Rail and Public Transportation. Please use the space below for your written comments or use the map on the back to illustrate your concerns.

The following is a summary of the issues and comments raised by the citizenry.

COORDINATION

- 2 _____ CITIZENS HAVE NO CONFIDENCE IN VDOT BECAUSE THEY LACK COHERENCE IN THEIR STUDIES. A FATAL FLAW IN ONE STUDY BECOMES A VIABLE OPTION IN ANOTHER
- 1 _____ THE ROUTE 29 CORRIDOR DEVELOPMENT STUDY AND THE I-66 CORRIDOR MIS NEED TO BE BETTER COORDINATED AND CONSIDERED TOGETHER
- 1 _____ THERE APPEARS TO BE A CONFLICT BETWEEN THIS STUDY AND THE RECENT ACTIONS BY THE FAUQUIER COUNTY BOARD OF SUPERVISORS TO SPEND \$2 MILLION TO STUDY POTENTIAL WIDENING OF ROUTE 29 NORTH OF WARRENTON. WHY ISN'T THERE BETTER COORDINATION BETWEEN VDOT AND THE COUNTY

SUBTOTAL: 4

COST

- 12 _____ YOU ARE WASTING TAXPAYER MONEY AND DISRUPTING FAMILIES LIVES
- 5 _____ I WOULD LIKE TO SEE MORE MONEY SPENT ON METRO RAIL TO GAINESVILLE AND OUTLYING AREAS
- 4 _____ USE LEAST TAXPAYER MONEY
- 3 _____ THE PUBLIC SHOULD KNOW HOW MUCH IT WOULD COST THE STATE TO BUY ALL THE RIGHT OF WAYS FOR THIS INITIATIVE AND THE EXACT PROPERTY IMPACTS INVOLVED
- 3 _____ VDOT STUDIES ARE AN EMBARRASSMENT TO THE STATE BY WASTING TAXPAYER MONEY AND NOT SUPPLYING GOOD INFORMATION OR IN SOME CASES NOT INFORMING THE PUBLIC AT ALL
- 1 _____ TRYING TO REMOVE ROUTE 29 AND ROUTE 234 FROM THE PARK SEEMS TO BE A WASTE OF MONEY
- 1 _____ HOW MUCH DO THESE STUDIES COST?

SUBTOTAL: 29

DEVELOPMENT

- 22 _____ THE PROPOSED ROADS IN THIS AREA ONLY BENEFIT DEVELOPERS AND TAKE AWAY FROM OUR QUALITY OF LIFE
- 20 _____ MR. WILBOURN MUST BE REMOVED FROM ANY STUDY GROUP WHERE THERE IS A CONFLICT OF INTEREST REGARDING DEVELOPMENT
- 14 _____ OUR AREA NEEDS BETTER ROADS NOT NEW ROADS

**Summary of Comments through January 18, 1998
Route 29 Corridor Development Study
Warrenton to Centreville**

- 10 _____ VDOT NEEDS TO STAND UP TO SPECIAL INTERESTS & DEVELOPERS
- 8 _____ NO NEW DEVELOPMENT!
- 5 _____ ROAD DEVELOPMENT STUDY IS TOO POLITICAL AND SELF-SERVING FOR EVERY INTEREST GROUP
- 2 _____ HOUSING DEVELOPMENT NEEDS TO BE PUT ON HOLD SO THE LAND CAN LIE FALLOW AND REJUVENATE
- 2 _____ MORE BACK ROAD SOLUTIONS DO NOT NEED TO BE EXPLORED
- 1 _____ CONCERN DEVELOPMENT HUB WILL MOVE FROM GAINESVILLE TO HAYMARKET
- SUBTOTAL: 84**

HISTORICAL, ENVIRONMENTAL & COMMUNITY PRESERVATION

- 57 _____ MY MAJOR CONCERNS ARE THE ENVIRONMENTAL IMPACTS ON THE WETLANDS AND ON THE HISTORIC ENVIRONMENT
- 18 _____ PROTECT HISTORIC PROPERTIES AND NATURAL RESOURCES BEFORE BUSINESS CONCERNS
- 14 _____ THE PROPOSED DEVELOPMENT WILL ADVERSELY IMPACT THE WATER SUPPLY FOR OVER .5 MILLION NORTHERN VIRGINIANS
- 12 _____ LEAVE BATTLEFIELD ALONE
- 8 _____ YOU TRIED TO REALIGN THE RAILROAD THROUGH THIS AREA, YOU TRIED TO PUT THE WESTERN TRANSPORTATION CORRIDOR THROUGH THIS AREA, THE HISTORICAL NATURE OF THIS AREA WILL STOP YOUR PROJECTS DEAD IN ITS TRACKS
- 6 _____ NORTHERN NEW ROADS WOULD AFFECT ENVIRONMENT AND HISTORICAL AREAS
- 5 _____ MINIMIZE DISRUPTION TO EXISTING HOUSING
- 4 _____ HISTORICAL INFORMATION RELATING TO BUCKLAND AREA MISSING FROM THE STUDY
- 3 _____ HISTORICAL RESIDENCE KNOWN AS "CERRO LEE" BISECTED BY LONG BYPASS ALIGNMENT
- 3 _____ HISTORIC BUCKLAND AND LAKE MANASSAS SHOULD BE AVOIDED
- 2 _____ I AM CONCERNED OVER THE POTENTIAL COMMUNITY IMPACTS OF ANY NEW CONSTRUCTION
- 2 _____ PRESERVE PRINCE WILLIAM COUNTY. LET FAUQUIER COUNTY BEAR THE BURDEN OF THE IMPROVEMENTS THEY DESIRE
- 2 _____ ROUTES COSTLY TO BUILD DUE TO ELEVATION NEEDED TO AVOID FLOOD PLAINS, WET LANDS AND STREAMS
- 2 _____ SOME PROPOSED ROUTES AFFECT FLOOD PLAINS, WET LANDS, POLLUTE BULL RUN STREAM, AND MAR BATTLEFIELD VIEW
- 2 _____ YELLOW ALIGNMENT ACROSS BULL RUN AT COMPTON ROAD REQUIRES EXTENSIVE ELEVATED ROADWAY DUE TO WETLANDS AND FLOOD PLAINS
- 2 _____ YOUR INFORMATION ON HISTORICAL SITES IS VERY LIMITED
- 1 _____ TOO MUCH OF OUR AREA IS COVERED WITH CONCRETE, ASPHALT, AND RIGHT-OF-WAYS
- 1 _____ WE NEED TO MINIMIZE THE CASUES OF AIR POLLUTION
- SUBTOTAL: 144**

**Summary of Comments through January 18, 1998
Route 29 Corridor Development Study
Warrenton to Centreville**

I-66

- 15 _____ WIDEN I-66
- 11 _____ INCREASE THE TRAFFIC CAPACITY ON I-66
- 3 _____ PEOPLE SHOULD BE USING I-66 INSTEAD OF ROUTE 29 FOR COMMUTING
- 1 _____ ADD HOV LANES ALONG I-66 FROM GAINESVILLE TO ROUTE 495 DURING PEAK HOURS
- 1 _____ ALLOW FOR RIGHT OF WAY ON I-66 WIDENING FOR METRO
- 1 _____ MAKE FAUQUIER EXIT OFF I-66 A CLOVERLEAF TO MOVE TRAFFIC SOUTH
- 1 _____ MAKE THE I-66 ENTRANCE RAMP ONE LANE AND ONLY ALLOW RIGHT TURNS FROM THE RIGHT LANE. SIGNAGE AND ARROWS PAINTED IN THE ROAD ARE NEEDED FOR THIS
- 1 _____ PROBLEM WITH EXISTING SIGNING ON I-66 ASSOCIATED WITH RECENTLY OPENED ROUTE 234 BYPASS. NEED TO IMPROVE THIS TO REDUCE DRIVER CONFUSION IN TERMS OF DESTINATIONS, ETC.

SUBTOTAL: 34

MAPS

- 15 _____ FOR ANY FUTURE STUDIES, USE OUR TAX MONEY TO SUPPLY US WITH LARGE READABLE CLEAR MAPS WITH CLEAR MARKINGS OF STREETS AND LABELING OF ALL ITEMS UNDER DISCUSSION
- 10 _____ YOUR MAPS ARE UNNUMBERED AND UNLABELED AND DO NOT INCLUDE COMPLETE INFORMATION ABOUT ALL THE HISTORIC/ ENVIRONMENTAL/ CULTURAL RESOURCES
- 2 _____ YOUR WEB SITE WOULD BE BETTER IF IT HAD A MAP ON IT
- 1 _____ DO NOT REFER TO MANASSAS BATTLEFIELD PARK AS MANASSAS PARK; THAT IS A SMALL CITY
- 1 _____ THERE IS TOO MUCH INFORMATION PRESENTED ON YOUR MAPS TO FULLY COMPREHEND
- 1 _____ USE LOCAL ROAD AND STREET NAMES, I.E., GUM SPRING FOR ROUTE 659, ETC.

SUBTOTAL: 30

MASS TRANSIT

- 2 _____ NEED MASS TRANSIT
- 1 _____ EXTEND VIRGINIA LIGHT RAIL FROM MANASSAS TO DULLES AIRPORT AND ALSO TO VIENNA METRO STATION, WITH CONNECTOR BUSES.
- 1 _____ I'M CONCERNED OVER RAILROAD IMPACTS IN GAINESVILLE AREA, AND SUGGEST RAILROAD / HIGHWAY GRADE SEPARATION IN THE NEAR TERM

SUBTOTAL: 4

**Summary of Comments through January 18, 1998
Route 29 Corridor Development Study
Warrenton to Centreville**

NO BUILD

38 LEAVE ROUTE 29 AS IT IS

13 NO NEW ROADS

SUBTOTAL: 51

NORTHERN ALIGNMENTS

67 THE TWO NORTHERN ALIGNMENTS ARE NOT ACCEPTABLE

4 BATTLEFIELD WILL LOSE ITS CHARACTER WHEN FENCED IN BY NORTHERN ALIGNMENTS

SUBTOTAL: 71

LONG NORTHERN ALIGNMENT

13 THE LONG NORTH BYPASS GOES THROUGH TOO MANY HOMES

6 I AM IN FAVOR OF THE LONG NORTH BYPASS

4 OPPOSED TO LONG NORTH BYPASS-AFFECTS WETLANDS, HISTORIC RESOURCES, COMMUNITY RESOURCES, HAYMARKET, AND ITS HISTORIC PRESERVATION

1 OPPOSE SIX LANE NORTH BATTLEFIELD BYPASS CORRIDOR IN FAUQUIER COUNTY AT ROUTE 215

1 THE LONG NORTH BYPASS FROM FAUQUIER LINE TO ACROSS BROAD RUN IS A 90 FT INCLINE IN 100 FT OF TRAVEL

1 THE NORTHERN SEGMENT WHICH CROSSES BROAD RUN WILL NOT WORK

SUBTOTAL: 26

SHORT NORTHERN ALIGNMENT

12 WHY WAS THE POLICY COMMITTEE PERMITTED TO ADD THE SHORT NORTH BYPASS WITHOUT PUBLIC INPUT?

6 THE SHORT NORTH BYPASS IS AN UNACCEPTABLE ALTERNATIVE

6 THE SHORT NORTH BYPASS IS THE MOST LOGICAL SOLUTION TO TRAFFIC PROBLEMS

2 SHORT NORTH ROUTES AFFECT HISTORIC NOT "POTENTIALLY HISTORIC." CONSTRUCT RT. 28 BYPASS FIRST

1 THE SHORT NORTH BYPASS WOULD BE BETTER IF IT CAN TIE INTO THE 234 BYPASS

SUBTOTAL: 27

**Summary of Comments through January 18, 1998
Route 29 Corridor Development Study
Warrenton to Centreville**

OTHER

- 6 _____ WIDENING EXISTING ROADS IS THE SOLUTION TO OUR TRAFFIC PROBLEMS
- 3 _____ WE ARE MOBILIZING TO STOP THIS!
- 1 _____ CONSIDER BUILDING A SHORT BYPASS OVER TO I-66 FROM NEW BALTIMORE
- 1 _____ CONSIDER BYPASS ROUTE ALTERNATIVES (WASHINGTON WESTERN BYPASS)
- 1 _____ CONSIDER NISSAN PAVILION TRAFFIC REQUIREMENTS DURING EVENING HOURS
- 1 _____ CONSIDER TIE-IN TO THE TRI-COUNTY PARKWAY IN FAIRFAX FOR TRAFFIC GOING SOUTH TO DULLES OR CENTREVILLE
- 1 _____ CONSIDER TIMEFRAME FOR CONSTRUCTION OF THE ROUTE 28/29 INTERSECTION IMPROVEMENTS
- 1 _____ CONSIDER TRAFFIC CARRIED BY UPGRADES OF GLENKIRK RD. AND SUDLEY MANOR DRIVE
- 1 _____ CONSIDER WARRENTON - MANASSAS - PRINCE WILLIAM COUNTY DAILY COMMUTERS
- 1 _____ DO NOT RING THE MANASSAS BATTLEFIELD WITH HIGHWAYS
- 1 _____ IF INCLINES NEED EXCAVATION, THE CORE SAMPLE IS SOLID BLUE STONE
- 1 _____ INSTEAD OF ROADS, OFFER FAIRFAX AND PRINCE WILLIAM COUNTY BUSINESSES TAX INCENTIVES FOR TELECOMMUTING
- 1 _____ IS A GOAL OF THIS STUDY TO MAKE TRUCK TRAFFIC PAINLESS FOR BUSINESSES AT THE EXPENSE OF LOCAL COMMUTERS / RESIDENTS / QUALITY OF LIFE ? LOCAL RESIDENTS RESENT GIVING PREFERENCE TO THROUGH TRAFFIC, ESPECIALLY TRUCK TRAFFIC
- 1 _____ NATIONAL BATTLEFIELD SCENIC EASEMENTS ON NORTH SIDE OF BULL RUN IGNORED
- 1 _____ NON-LOCAL FIRMS MIGHT BE MORE OBJECTIVE IN DOING THE STUDY
- 1 _____ REMOVAL OF SOUTH ALIGNMENTS IS ARBITRARY AND BASED ON SPECIOUS REASONS
- 1 _____ SOLVE THE LAND USE PROBLEMS IN VIRGINIA BEFORE BUILDING ANOTHER ROAD
- 1 _____ SUPPORT LANGUAGE ADOPTED BY COMMONWEALTH TRANSPORTATION BOARD RESOLUTION
- 1 _____ THE GAINESVILLE AREA RAILROAD PROBLEM NEEDS TO BE RESOLVED
- 1 _____ VDOT SHOULD DEVELOP BEST ROAD WITH BEST ALIGNMENT THAT WILL SERVE THE MAJORITY OF THE POPULATION
- 1 _____ WHY HIRE OUT-OF-STATE FIRMS TO DO THIS PROJECT WHEN THERE ARE LOTS OF LOCAL VIRGINIA FIRMS WHO COULD DO THE WORK
- 1 _____ YOU MUST ACCOUNT FOR INDUCED TRAFFIC EFFECTS

SUBTOTAL: 29

OTHER ALIGNMENTS

- 2 _____ THE 43A ALIGNMENT HIGHLIGHTED IN RED SHOULD BE CONSIDERED TO RUN ALONG ROUTE 15 TO ROUTE 29 AND USE THE C1 OR C1D ALIGNMENT
- 1 _____ ADD ONE LANE EACH DIRECTION FROM ROUTE 605, WARRENTON TO GAINESVILLE--HOV DURING PEAK HOURS. USE ROUTE 234 BYPASS ENTRANCE/EXIT RAMP TO REROUTE ROUTE 29 FOLLOWING SHORT NORTH BYPASS. RETURN EXISTING ROUTE 29 NEAR CENTREVILLE VIA THE TRI-COUNTY PARKWAY

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Summary of Comments through January 18, 1998
Route 29 Corridor Development Study
Warrenton to Centreville

- 1 _____ IF A PROPOSED ROUTE MUST BE DEVELOPED, USE THE "OTHER ROUTE 29 CANDIDATE" THAT IS FARTHEST WEST AND NORTH ON THE MAPS
- 1 _____ MOVE A5A EAST ADJACENT TO RELOCATED POWERLINE AND GO NORTHEAST ALONG GAS LINE EASEMENT; TIE IN NORTH NEAR GUM SPRINGS ROAD
- 1 _____ OBJECT TO A3A AND SUGGEST IMPROVEMENT OF EXISTING C1E, C1F
- 1 _____ ON THE WESTERN CORRIDOR RUN ADJACENT TO ROUTE 17 FROM FREDERICKSBURG TO WARRENTON, THEN SPLIT; EASTERN LEG PARALLELS ROUTE 15 FROM WARRENTON TO MARYLAND AND I-270, WESTERN LEG FOLLOWS ROUTE 17 TO WINCHESTER AND I-81.
- 1 _____ RECOMMEND A SOUTHERN ROAD ALONG INDUSTRIAL PARKS
- 1 _____ ROUTE 17 TO ROUTE 28 TO THE ROUTE 234 BYPASS WILL MOVE TRAFFIC OFF OF ROUTE 29
- 1 _____ STUDY EXISTING ROUTE WITH GRADE SEPARATION AND EXPAND FURTHER EAST TO BYPASS BATTLEFIELD
- 1 _____ THE SECTION OF A3 HIGHLIGHTED IN RED SHOULD GO ALONG ROUTE 15 TO ROUTE 29 AND GO BY HISTORIC BUCKLAND ON THE SOUTH SIDE. THERE IS ONLY ONE HOUSE RIGHT ON THE ROAD AND IT WOULD KEEP THAT SPUR FROM GOING THROUGH A NEIGHBORHOOD. IT WOULD USE ALIGNMENT C1D OR THE C1 ALIGNMENT
- 1 _____ USE ROUTE 29 TO GAINESVILLE, I-66 TO 234 BYPASS, SHORT BYPASS TO TRI-COUNTY PARKWAY
- SUBTOTAL: 12**

PETITIONS

PLEASE SEE ATTACHED PETITIONS AT THE END OF THIS SUMMARY

- 1108 _____ SIGNATURES ON THE CITIZENS AGAINST ROADS FOR DEVELOPERS (CARD) PETITION
- 66 _____ SIGNATURES ON THE PRINCE WILLIAM COUNTY RESIDENTS TO THE PRINCE WILLIAM COUNTY COMPREHENSIVE PLAN REVIEW TASK FORCE, ET AL. PETITION
- SUBTOTAL: 1174***

PROCESS

- 4 _____ VDOT SHOULD ALLOW THE PUBLIC TO HAVE MORE INPUT IN THEIR PROJECTS
- 3 _____ I DO NOT CARE FOR YOUR PUBLIC INFORMATION MEETINGS IN PLACE OF THE MORE FORMAL PUBLIC HEARINGS
- 2 _____ EVERYBODY IN THE STUDY AREA SHOULD AT LEAST RECEIVE A POST CARD LETTING THEM KNOW WHERE THEY CAN GET INFORMATION
- 2 _____ THANK YOU FOR THE WAY YOU'RE CONDUCTING THIS PROCESS
- 2 _____ YOUR PRESENTATION WAS WONDERFULLY COMPREHENSIVE
- 1 _____ DO PEOPLE REALLY READ THE COMMENTS?
- 1 _____ ENJOYED ATTENDING PUBLIC MEETING
- 1 _____ SUGGEST FUTURE BRIEFINGS BE HELD IN A STATE OR COUNTY BUILDING OR SCHOOL
- 1 _____ WHEN WILL THIS MOVE INTO NEPA STUDY?
- 1 _____ WHO COMPRISES THE COMMONWEALTH TRANSPORTATION BOARD AND WHERE ARE THEY FROM?

Summary of Comments through January 18, 1998
Route 29 Corridor Development Study
Warrenton to Centreville

1 _____ YOU HAVE DONE A GREAT JOB STUDYING THE ALTERNATIVES

SUBTOTAL: 19.

ROUTE 15

3 _____ WIDEN ROUTE 15

1 _____ MAKE ROUTE 15 A TRUCK ROUTE

SUBTOTAL: 4

ROUTE 28

7 _____ INCREASE TRAVEL CAPACITY ON ROUTE 28

SUBTOTAL: 7

ROUTE 29

15 _____ CLOSE ROUTE 29 THROUGH THE BATTLEFIELD

6 _____ CLOSE ROUTE 29 TO ALL BUT LOCAL TRAFFIC BETWEEN CENTREVILLE & GAINESVILLE

5 _____ MAKE IMPROVEMENTS TO ROUTE 29 INSTEAD OF CREATING MORE COSTLY ALTERNATIVES

3 _____ THERE SHOULD BE A LEFT TURN AT THE INTERSECTION OF ROUTE 29 WITH 234

2 _____ FIX THE 234 & 29 INTERSECTION BY ELIMINATING A LEFT TURN ONTO 234 SOUTH FROM 29 DURING RUSH HOURS

2 _____ WIDEN ROUTE 29 THROUGH BATTLEFIELD

1 _____ ALIGNMENTS OUTSIDE OF ROUTE 29 USE HUGE AMOUNT OF NEW ROAD FOR SEVERAL SMALL BOTTLENECKS

1 _____ CONCERN REGARDING INCREASE OF TRUCK TRAFFIC ON ROUTE 29

1 _____ CONSIDER THE LACK OF SHOULDERS ON ROUTES 234 & 29 THROUGH THE MANASSAS BATTLEFIELD PARK

1 _____ DEVIATE SOUTHERN PORTION OF ANY ROUTE 29 BYPASS OPTIONS FROM EXISTING ROUTE 29 SOONER THAN CURRENTLY SHOWN TO STAY FURTHER AWAY FROM THE STREAMS FLOWING INTO LAKE MANASSAS

1 _____ DO NOT PUT AN AT GRADE INTERSECTION AT ROUTE 15 AND ROUTE 29 TO FACILITATE TRAFFIC TO VINT HILL

1 _____ FAUQUIER COUNTY RESIDENTS NEED TO BE ABLE TO BYPASS THE CONGESTION & DEVELOPMENT ALONG ROUTE 29

1 _____ FIX THE INTERSECTION AT ROUTE 29 & 234

1 _____ IF YOU MUST DO SOMETHING ON ROUTE 29, ADD TURN LANES AT THE STONE HOUSE

1 _____ MAKE THE RIGHT ROUTE 29 LANE A REQUIREMENT TO ENTER ONTO I-66 AND THE LEFT LANE BE AN OPTIONAL STRAIGHT OR RIGHT LANE TURN ONTO THE I-66 ENTRANCE RAMP

1 _____ PLAN TO IMPROVE THE ROUTE 29 & ROUTE 215 INTERSECTION

**Summary of Comments through January 18, 1998
Route 29 Corridor Development Study
Warrenton to Centreville**

- 1 _____ REBUILD ROUTE 29 THROUGH THE PARK WHERE IT BELONGS; IT WILL SAVE 100 MILLION DOLLARS
- 1 _____ RESTRICT TRUCKS FROM USING ROUTE 29 DURING CERTAIN TIMES OF THE DAY
- 1 _____ STAY AS CLOSE TO CURRENT ROUTE 29 SO NEW AREAS AREN'T OPENED UP TO DEVELOPMENT
- 1 _____ TAKE CURVE OUT OF ROUTE 29 AT NEW BALTIMORE
- 1 _____ THE WESTERN TRANSPORTATION CORRIDOR WILL RELIEVE TRAFFIC FROM ROUTE 29
- 1 _____ TRAFFIC GOING NORTH ON ROUTE 29 SHOULD BE PROVIDED WITH MORE ACCESSIBILITY TO I-66 EAST RATHER THAN CONTINUE ON ROUTE 29 THROUGH THE BATTLEFIELD
- 1 _____ UPGRADE ROUTE 29 TO THREE LANES EACH WAY AND DO THE SAME FOR ROUTE 28
- 1 _____ WIDENING 29 THROUGH BUCKLAND IS A PROBLEM
- SUBTOTAL: 51**

ROUTE 29 DESIGNATION ON I-66

- 136 _____ THE ALIGNMENT THAT MERITS SUPPORT IS THE ROUTE 29 DESIGNATED ON I-66
- 1 _____ COMBINE ROUTE 29 WITH I-66 FROM ROUTE 234 TO THE FAIRFAX PARKWAY BECAUSE THEN THERE IS NO FUTURE RIGHT OF WAY REQUIRED
- 1 _____ DROP THE I-66/ROUTE 29 OVERLAP DESIGNATION
- SUBTOTAL: 138**

ROUTE 234

- 7 _____ CLOSE ROUTE 234 THROUGH THE BATTLEFIELD
- 4 _____ THERE IS NO CURRENT ALTERNATIVE THAT IS SAFE FOR ROUTE 234 THROUGH THE PARK. IF ROUTE 234 IS TO BE CLOSED, AN ALTERNATIVE MUST BE PROVIDED FOR ACCESS TO AND FROM PROPERTIES WITHIN & ADJACENT TO THE PARK
- 2 _____ DO NOT MESS WITH THE ROUTE 234 INTERSECTION
- 2 _____ I DO NOT WANT ROUTE 234 NORTH TO LOOK LIKE ROUTE 234 SOUTH
- 1 _____ COMPLETE 234 BYPASS NORTH OF 6 & TRI-COUNTY PKWY NORTH TO DULLES
- 1 _____ INCLUDE ROUTE 234 BYPASS FROM I-95 NEAR QUANTICO TO DULLES AIRPORT AS PART OF ANY SERIOUS STUDY
- 1 _____ REBUILD ROUTE 234 THROUGH THE PARK WHERE IT BELONGS; IT WILL SAVE 100 MILLION DOLLARS
- 1 _____ RESTRICT TRUCK TRAFFIC ON ROUTE 234 THROUGH THE BATTLEFIELD
- 1 _____ WIDEN ROUTE 234 SOUTH OF ROUTE 29 TO I-66
- SUBTOTAL: 20**

**Summary of Comments through January 18, 1998
Route 29 Corridor Development Study
Warrenton to Centreville**

TRUCKS

1 _____ CONSIDER ALTERNATIVE ROUTES FOR TRUCK TRAFFIC

1 _____ NOISE LEVELS OF TRUCK TRAFFIC IS INTOLERABLE

SUBTOTAL: 2

GRAND TOTAL: 786**

***IT IS POSSIBLE THAT THERE ARE DUPLICATE SIGNATURES ON THE TWO PETITIONS ATTACHED TO THIS SUMMARY.
TOTAL DOES NOT INCLUDE 1174 SIGNATURES FROM THE TWO PETITIONS.

Citizens Against Roads for Developers - CARD, Inc.

P.O. Box 163, Catharpin, VA 20143

January 15, 1998

Route 29 Development Study
Travesky & Associates, Ltd.
3900 Jermantown Road
Fairfax, Virginia 22030

Dear Sir:

On behalf of our supporters, we write to comment on the Route 29 Development Study. Of the alternatives you have presented to the public, the only reasonable one, if anything is done, is to **designate Rt. 29 onto Rt. 66 between Gainesville and Centreville.**

The new swaths that would be cut by either of the routes north of Manassas Battlefield are not justified. Further, little of the projected traffic on the Long Northern Alternative is east/west, fulfilling the Study's objective, rather than north/south. Also, there was **no** modeling done on the Short Northern Alternative.

We do not accept that the routes south of the Battlefield were given fair study. The project plans at the northwest corner of Rt. 234 and Battleview Parkway were never reviewed. Battleview Parkway is already planned to extend all the way west through that property to provide access for the adjacent parcel.

Two matters have marred the credibility of this study. One is the reinstatement of the previously eliminated Short Northern Route. That was done by the Policy Advisory Committee November 20, 1997 at the request of Chairman Seefeldt at the behest of Supervisor Wilbourn, both of Prince William County. The Resolution to add the Short Northern Alternative back into the study was introduced at the November 18, 1997 Prince William Board of County Supervisors Meeting after the session had begun and without such item on the Agenda. Yet a whole month before on October 17, 1997, Chairman Seefeldt had written to the Chairman of the Board of three other counties stating such item was planned for the November 18 Agenda. However, the public was never informed. The Prince William Board of County Supervisors never provided an opportunity for public comment on the study. Please see the attachments regarding this matter.

The second matter which has marred the credibility of this study is the fact that one of the members of the Policy Advisory Committee, Supervisor Wilbourn, has recently announced his new job as a developer. One of his projects is situated within the Route 29 Study Area, to the south of Rt. 29 at Gainesville. He is the person who wrote and introduced the Prince William County Resolution to put the Short North Alternative back into the study and moved to have the Board approve such. His inclusion on the Committee is unfortunate enough, but such action taken at his behest leaves the study tainted. It is impossible to discern in taking such action whether it was in the public's interest or his own. It was certainly an action that does not represent the vast majority of his constituents. Again, please refer to the attachments regarding this.

Accompanying this letter is a petition of 1142 people who oppose the two northern routes and to whom the only acceptable alternative is to designate Rt. 29 onto Rt. 66 between Gainesville and Centreville.

Yours truly,

Martha Hendley
Martha Hendley, President

Citizens Against Roads for Developers

P.O. Box 163, Catharpin, Virginia 20143

Phone: (703) 754-4181

Fax: (703) 754-0945

WHEREAS, Citizens Against Roads for Developers (CARD) is being formed to oppose the building of more developer roads in Prince William County, Loudoun County, Fauquier County and Stafford County;

WHEREAS, the map on the reverse side includes roads which have been offered by various governmental agencies, politicians, and other special interest groups;

WHEREAS, CARD will undertake, in opposing the building of more developer roads, to:

1. educate the public;
2. communicate with political leaders;
3. take necessary legal action; and
4. raise money and do all acts to carry out the foregoing objectives.

That having read the foregoing, the following persons state that they support the above objectives and request inclusion in CARD. So that CARD will be able to state its total number of participants who agree with its objectives without having to canvas, each person who hereafter signs, agrees to promptly advise CARD in writing, at the above address, if said person changes his/her position and no longer supports the above objectives.

Incorporation of this organization is pending and all signatures will be transferred to said corporation.

DO NOT SIGN THIS PETITION WITHOUT READING THE FOREGOING.

Name (Print & Sign)

Address (Please print clearly)

Phone Number

1108 _____ SIGNATURES ON THE CITIZENS AGAINST ROADS FOR DEVELOPERS (CARD) PETITION

ATTACHMENT B

To the PWC Comprehensive Plan Review Task Force, the PWC Planning Commission, and the PWC Board of County Supervisors:

We, the undersigned residents of Prince William County, support the following proposals for the PWC Comprehensive Plan:

- A. We oppose the Western Corridor in any way, shape, or form;
- B. We want Artemus Extended removed from the plan and the map;
- C. We do not want the Battlefield Bypass over Stoncy Ridge, now referred to as the Dulles Parkway, to be included in the plan;
- D. We support completion of the Rt. 28 Bypass (and flood control for that area) to help relieve traffic on Rts. 234, 29, and 66;
- E. We support the alternative to Rt. 29 commuter and local traffic through Manassas Battlefield in a corridor that runs south of the Battlefield and north of Rt. 66: i.e., along Pageland Lane, Battleview Parkway, and the frontage road to the Rt. 66 rest stop connecting to the east with the Tri-County Connector or back into Rt. 29;
- F. We support connecting the eastern end of Balls Ford Road to an appropriate road in Fairfax County as another alternative for local and commuter traffic now using Rt. 29 through Manassas Battlefield.
- G. Delete the Rt. 234 Bypass north of Rt. 66 and north of Rt. 234.

NAME	ADDRESS	PHONE
please print name below signature	please include zip code	

Comment Sheet

Route 29 Corridor Development Study Warrenton to Centreville

Understanding the concerns of our customers is important to the Virginia Department of Transportation and the Department of Rail and Public Transportation. Please use the space below for your written comments or use the map on the back to illustrate your concerns.

January 8, 1998

Thank You for Participating!

Name: _____

Address: _____

Please return comment sheet by January 18, 1998

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fold here ----

PLACE
STAMP
HERE

Route 29 Corridor Development Study
c/o Travesky & Associates, Ltd.
3900 Jermantown Road, Suite 300
Fairfax, VA 22030

ATTACHMENT D



I-66 CORRIDOR MIS

February 20, 1998

I-66 AND THE BELTWAY

- VDOT has begun the Phase II Capital Beltway Study following the recently concluded Major Investment Study. Phase II will focus on the section of I-495 between the American Legion Bridge and the Springfield Interchange between I-95 / I-395 / I-495. During this Phase II study, VDOT with the HNTB consultant team will conduct preliminary engineering and the preparation of an environmental impact assessment document.
- The Phase II study is pursuing two basic Beltway concepts:
 - (1) the Constrained Long Range Transportation Plan (CLRP) addition of a fifth travel lane in each direction, designated for use during peak travel periods by High Occupancy Vehicles
 - (2) the creation of a barrier-separated, express / local configuration allowing for lane management (HOV, other) strategies.
- I-495/I-66 interchange designs assume three (3) general use travel lanes in each direction and a two-lane, reversible, barrier-separated HOV facility on I-66 west of the Beltway.
- Both Beltway design concepts (HOV, Express/Local) include a multi-level, fully-directional interchange at I-66 / I-495 providing separate ramp connections between the proposed general use and HOV lanes along both I-66 and I-495.
- The interchange designs from the Phase II Beltway study should relieve major congestion problems on I-66 at the Beltway. For example, AM traffic heading for Tyson's would no longer have to weave across traffic after merging from the left onto the Beltway northbound. Instead, this traffic would exit I-66 on a two-lane flyover ramp then join the northbound Beltway traffic from the right side.
- No Beltway and I-66 interchange concepts being studied will preclude any I-66 MIS Screen 2B alternative strategies.
- I-66 MIS Screen 2B strategies that propose improvements to I-66 up to the interchange with the Beltway will require improvements to the existing I-66/I-495 interchange.



Major Baseline Elements for 2020 Plan Timeframes

Source: FY98-03 TIP and CLRP Air Quality Conformity Inputs

(** indicates significant changes/additions to FY 99-04 TIP and CLRP (02/13/98 draft))

CLRP (2010 Network)

Facility	Limits	Proposed Improvement
I-66 HOV (Peak)	US 15 to US 29 (Gainesville) US 29 (Gainesville) to VA 234	4 to 6 4 to 8
I-95 HOV (Peak)	Stafford/PW Line to Quantico Creek	- to 2
I-95 HOV (Peak)	Quantico Creek to I-395	2 to 3
I-95 (Interchange)	at I-395/I-495	Reconstruct
I-95	VA 241 (Telegraph Rd.) to DC Line (Wilson Bridge and Approaches)	6/8 to 10
**I-95	Newington to VA 123	6 to 8
I-395 HOV (Peak)	I-95 to DC Line	2 to 3
US 1	Stafford/PW line to VA 235 N	4 to 6
US 1 (Interchange)	at VA 123	Construct
VA 7 (Interchanges)	VA 7/US 15 Bypass to VA 28	Upgrade to Freeway
VA 7	VA 28 to Dulles Toll Road	4 to 6
VA 7	Dulles Toll Road to I-495	6 to 8
VA 7 (Leesburg Bypass)	Bus. 7 West to Bus. 7 East	4 to 6
VA 28	VA 215 to VA 234 Bypass	2 to 4
VA 28	NCL Manassas to NCL Manassas Park	4 to 6
**VA 28	Access to Smithsonian Air & Space Museum	Construct interchange
US 29	East City Limits (Fairfax) to I-495	4 to 6
US 29 (Interchange)	at VA 28	Construct interchange
US 29	Cedar Lane to I-495	4 to 6
US 50	Middleburg Bypass to VA 616 (Goshen Rd.)	2 to 4
US 50	Centreville Rd. to Stringfellow Rd.	4 to 6
US 50 (Interchange)	at Courthouse Rd/10 th Street	
VA 123	Fairfax/Prince William line to Fairfax Co. Pkwy	2 to 6
VA 123	Fairfax Co. Pkwy to Burke Centre Pkwy	4 to 6
VA 123	VA 7 to I-495	6 to 8
VA 123	US 50 to I-66	4 to 6
VA 234	Waterway Drive to VA 234 Bypass	2 to 4
VA 234 Bypass	VA 28 to VA 234/649 South of Manassas	0 to 4
VA 267 (DTR) HOV (Peak)	VA 28 to I-495	6 to 8
Dulles Airport Access Rd.	Dulles Airport to VA 123	4 to 6
Fairfax Co. Parkway	Sunset Hills Rd. to VA 7 Interchanges @ Baron Cameron Ave & VA 7	0 to 4/6
Fairfax Co. Parkway	Sunrise Valley Rd. to VA 123	4 to 6
Fairfax Co. Parkway	Hooes Rd to Sydenstricker	4 to 6
Fairfax Co. Parkway	F-S Parkway to Fullerton Rd	0 to 4
Battlefield Parkway	US 15 (south of Leesburg) to US 15 Bypass north	- to 4/6
VA 611 (Telegraph Rd)	US 1 to VA 644 (Franconia Rd.)	2 to 4
VA 638 (Rolling Rd)	VA 644 (Old Keene Mill Rd.) to US 1	2 to 4
Metrorail/VRE Station	Potomac Yards- Alexandria	

CLRP (2020 Network)

Facility	Limits	Proposed Improvement
I-495 HOV (Peak)	I-395 to Dulles Toll Road	8 to 10
US 15	US 29 to Loudoun Line	2 to 4
VA 28 Bypass	VA 234 to I-66	0 to 4
VA 28	Fauquier Line to VA 215	2 to 4
US 50	Loudoun/Fairfax Line to VA 661 (Lee Road)	4 to 6
VA 234 Bypass	I-66 to VA 234 South of Manassas	4 to 6
VA 236	Pickett Rd. to I-395	4 to 6
VA 3000 (PW Co. Pkwy)	VA 640 to Liberia Ave.	4 to 6
Fairfax Co. Parkway	F-S Parkway to Fullerton Rd	4 to 6
VA 620 (Braddock Rd)	Fairfax Co. Parkway to VA 123	4 to 6
VA 641 (Old Bridge Rd.)	VA 3000 (PW Co. Pkwy) to VA 640 (Minnieville)	4 to 6
VA 659 (Belmont Ridge Rd.)	PW/Loudoun Line to VA 7	2 to 4

Major Studies (Underway or Planned in the CLRP)

Study	Limits
I-66 MIS	US 15 to Capital Beltway
I-95 (Beltway) HOV	I-395 to Woodrow Wilson Bridge
I-95/I-395 HOV Policy Study	
I-495 HOV (Peak)	Dulles Toll Road to American Legion Bridge
**US 15 (4 to 6 Lanes)	US 29 to Loudoun Line
VA 9	West Virginia Line to VA 7
VA 28 (Widen and Interchanges)	I-66 to Dulles Toll Road
VA 28 (Interchanges)	Dulles Toll Road to VA 7
Tri-County Parkway	I-66 to US 50
Loudoun Parkway	US 50 to Dulles Greenway/VA 607
US 29 (4 to 6 lanes)	Fauquier Line to VA 123
US 29	Relocation around Manassas Battlefield
Western Transportation Corridor	I-95 to VA/MD Line
Prince William/Fairfax Connector	Eastern Prince William County to Western Fairfax County
Metrorail	West Falls Church to Dulles Airport/Loudoun Co.
Metrorail	Vienna to Centreville
Metrorail	Huntington to Tysons Corner via VA 236
Metrorail	Pentagon to Tysons Corner via Columbia Pike and Gallows Road
VRE	Manassas to Haymarket



Screen 2A Results

January 21, 1998



Attachment #4

Screen 2A Results

January 21, 1998

This report summarizes the analysis of Screen 2A conducted by the Study Team and the TAC during meetings held in November, December, and January. It is organized as follows:

- **Summary Table 1** – presents the strategies recommended for Screen 2B by the Study Team and those suggested by the TAC during their January 20, 1998 meeting.
- **Summary Table 2** – describes the 15 Screen 2A strategies, presents a summary of the analytical results and the Study Team and TAC recommendation for each.
- **Strategy Maps** – provides diagrams showing the key features of each strategy.
- **Summary Evaluation Matrix** – contains an evaluation of each strategy for each of the approved Screen 2A goals and associated measures of effectiveness.
- **Technical Appendix** – provides one page descriptions of the 17 Screen2A strategies with both positive and negative comments based upon the Screen 2A travel demand MOEs, and a recommendation to either retain or drop the strategy for Screen 2B. Please note that all comparative numbers relate a given strategy to the Enhanced Baseline unless otherwise indicated.

A recommendation not to study a Screen 2A strategy in Screen 2B means that the strategy did not perform as well as other Screen 2A strategies as compared to the Screen 2A Measures of Effectiveness.



SUMMARY TABLE 1 – STRATEGIES RECOMMENDED FOR SCREEN 2B

STRATEGIES	STUDY TEAM RECOMMENDATIONS 1-13-98	TAC RECOMMENDATIONS 1-20-98	PAC RECOMMENDATIONS 1-29-98
Baseline	X	X	
Enhanced Baseline	X	X	
#1 – General Purpose Lanes + HOV Reversible Lanes	X	X	
#2 – General Purpose Lanes + 3 Light Rail Lines			
#3 – General Purpose Lanes + Metrorail to Gainesville		X	
#4 – HOV Reversible Lanes + 3 Light Rail Lines			
#5 – HOV Reversible Lanes + Metrorail to Centreville	X	X	
#6 - 1 Light Rail Line + Metrorail to Centreville			
#7 – General Purpose Lanes + HOV Reversible Lanes + 3 Light Rail Lines	X	X	
#8 – General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville	X	X	
#9 – General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville	X	X	
#10 – HOV Reversible Lanes + 1 Light Rail Line + Metrorail to Centreville			
#11 - I-66 Express / Local	X	X	
#12 – Super Bus		X	
#13 – Highway Plan	X	X	
#14 – Generic Rail to Gainesville			
#15 – VRE to Gainesville		X	

SUMMARY TABLE 2 – RECOMMENDATION ON SCREEN 2A STRATEGIES

SCREEN 2A STRATEGY	ANALYTICAL RESULTS	RECOMMENDATION
<p>Baseline (CLRP)</p> <p>The Baseline consists of the highway and transit improvements contained in the currently adopted (July 1997) Constrained Long Range Transportation Plan (CLRP) for the Metropolitan Washington Region.</p>	<p>Basis for comparison for other study options.</p>	<p>Study Team – Retain TAC – Retain PAC - _____</p>
<p>Enhanced Baseline</p> <p>The Enhanced Baseline serves as the basis for comparison to all other strategies. It consists of low cost, TSM and TDM type improvements to the Baseline. The Enhanced Baseline tests increased bus service in the central and western portions of the study area with no changes in lane-miles of highway capacity.</p>	<p>Basis for comparison to more capital intensive strategies.</p>	<p>Study Team – Retain TAC – Retain PAC - _____</p>
<p>#1 – General Purpose Lanes + HOV Reversible Lanes</p> <p>Strategy #1 combines reversible, barrier-separated HOV 2+ lanes on I-66 with additional general-purpose lanes on I-66, Route 50, and Route 29.</p>	<p>Very positive effects upon reductions in peak period highway congestion and person throughput.</p>	<p>Study Team – Retain TAC – Retain PAC - _____</p>
<p>#2 – General Purpose Lanes + 3 Light Rail Lines</p> <p>Strategy #2 combines additional general purpose lanes on I-66 with a three line LRT system connecting Manassas, Centreville, Dulles Airport, and the Vienna/Fairfax-GMU Metrorail station.</p>	<p>Mixed to poor performance relative to the Enhanced Baseline and other strategies that incorporate the same modal elements.</p>	<p>Study Team – Drop TAC - Drop PAC - _____</p>
<p>#3 – General Purpose Lanes + Metrorail to Gainesville</p> <p>Strategy #3 combines adding one additional general purpose (SOV) lane to I-66, additional general-purpose lanes on Routes 29 and 50, and a Metrorail extension from Vienna/Fairfax-GMU to Gainesville.</p>	<p>Relatively small increase in rail ridership associated with rail extension to Gainesville.</p>	<p>Study Team – Drop TAC – Retain PAC - _____</p>

SCREEN 2A STRATEGY	ANALYTICAL RESULTS	RECOMMENDATION
<p>#4 – HOV Reversible Lanes + 3 Light Rail Lines</p> <p>Strategy #4 combines reversible, barrier-separated HOV 2+ lanes on I-66 and Route 29 with a three line LRT system connecting Manassas, Centreville, Dulles Airport, and the Vienna/Fairfax-GMU Metrorail station.</p>	<p>Mixed or poor performance relative to the Enhanced Baseline and other strategies that incorporate the same modal elements.</p>	<p>Study Team – Drop TAC – Drop PAC - _____</p>
<p>#5 – HOV Reversible Lanes + Metrorail to Centreville</p> <p>Strategy #5 combines reversible, barrier-separated HOV 2+ lanes on I-66 with an extension of Metrorail to Centreville.</p>	<p>Significant increases in Metrorail ridership and other transit performance measures.</p>	<p>Study Team – Retain TAC – Retain PAC - _____</p>
<p>#6 – 1 Light Rail Line + Metrorail to Centreville</p> <p>Strategy #6 combines a Metrorail extension connecting at Centreville to an LRT line linking Dulles Airport and Manassas Airport.</p>	<p>Mixed performance relative to Screen 2A MOEs. Other alternatives incorporate the same transit modal elements with better overall results.</p>	<p>Study Team – Drop TAC – Drop PAC - _____</p>
<p>#7 – General Purpose Lanes + HOV Reversible Lanes + 3 Light Rail Lines</p> <p>Strategy #7 combines adding general purpose travel lanes and reversible, barrier-separated HOV lanes to I-66, with a three line LRT system connecting Manassas, Centreville, Dulles Airport, and the Vienna/Fairfax-GMU Metrorail station.</p>	<p>High transit performance indicators and overall improvements to highway level of service; test cost-effectiveness of LRT versus extending Metrorail beyond Vienna/Fairfax-GMU; test versus Strategy #9 allows LRT alignment options south from Centreville to Manassas (Route 28 corridor vs. Route 28 Bypass).</p>	<p>Study Team – Retain TAC – Retain PAC - _____</p>
<p>#8 – General Purpose Lanes + HOV Reversible Lanes + Metrorail to Centreville</p> <p>Strategy #8 combines adding general purpose lanes on I-66, Route 29, and Route 50 with both reversible, barrier-separated HOV lanes along I-66 and a Metrorail extension to Centreville.</p>	<p>Very positive effects upon reduction in peak period highway congestion and generally positive transit performance indicators.</p>	<p>Study Team – Retain TAC – Retain PAC - _____</p>

SCREEN 2A STRATEGY	ANALYTICAL RESULTS	RECOMMENDATION
<p>#9 – General Purpose Lanes + 1 Light Rail Line + Metrorail to Centreville</p> <p>Strategy #9 combines adding general purpose lanes to I-66, Route 29 and Route 50 with a Metrorail extension connecting at Centreville to an LRT line linking Dulles Airport and Manassas Airport.</p>	<p>Good overall transit performance and to help assess cost-effectiveness of Metrorail and LRT elements in comparison to other multi-modal alternatives that incorporate the same modal elements.</p>	<p>Study Team – Retain TAC – Retain PAC - _____</p>
<p>#10 - HOV Reversible Lanes + 1 Light Rail Line + Metrorail to Centreville</p> <p>Strategy #10 combines reversible, barrier-separated HOV 2+ lanes on I-66 with a Metrorail extension connecting at Centreville to an LRT line linking Dulles Airport and Manassas Airport.</p>	<p>Overall mixed performance relative to the Enhanced Baseline and other strategies that incorporate the same modal elements.</p>	<p>Study Team – Drop TAC – Drop PAC - _____</p>
<p>#11 - I-66 Express / Local</p> <p>Strategy #11 rebuilds I-66 to an express / local configuration that provides six travel lanes in each direction between the Capital Beltway (I-495) and Route 29 at Gainesville. The express lanes in this configuration offer system management opportunities for HOV and other special uses.</p>	<p>Assess physical impacts and cost-effectiveness of the express / local approach in conjunction with the I-495 Capital Beltway studies. Retention allows relative comparison with other strategies that incorporate SOV and HOV improvements to the I-66 mainline.</p>	<p>Study Team – Retain TAC – Retain PAC - _____</p>
<p>#12 – Super Bus</p> <p>Strategy #12 consists of significant bus system improvements beyond those assumed as part of the Enhanced Baseline.</p>	<p>Overall poor performance relative to the Enhanced Baseline and both highway and transit related MOEs in Screen 2A.</p>	<p>Study Team – Drop TAC – Retain PAC - _____</p>
<p>#13 – Highway Plan</p> <p>Strategy #13 provides selected highway improvements designed to improve both east-west and north-south connectivity.</p>	<p>Reductions in peak period highway congestion, particularly north-south oriented travel demands in the central and western portions of the study area.</p>	<p>Study Team – Retain TAC – Retain PAC - _____</p>

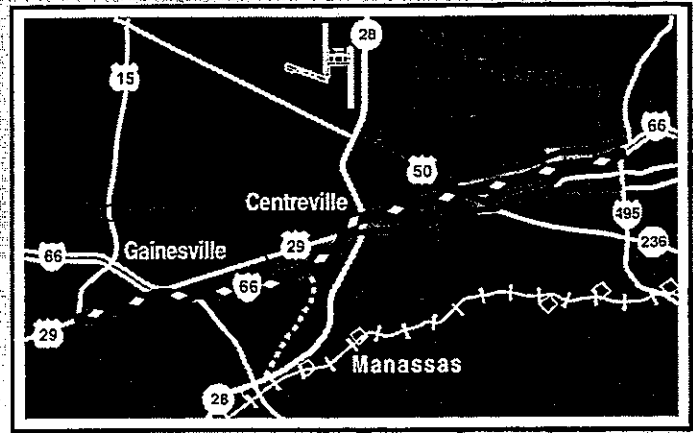
SCREEN 2A STRATEGY	ANALYTICAL RESULTS	RECOMMENDATION
<p>#14 – Generic Rail to Gainesville</p> <p>Strategy #14 provides fixed rail in the median of I-66 between the Vienna/Fairfax-GMU Metrorail Station and Gainesville.</p>	<p>Overall poor performance relative to virtually all of the highway related MOEs and the same or superior performance relative to the transit related MOEs of other alternatives which incorporate the same modal elements.</p>	<p>Study Team – Drop TAC – Drop PAC - _____</p>
<p>#15 - VRE to Gainesville</p> <p>Strategy #15 extends VRE approximately 7.5 miles from the Manassas VRE station to Gainesville using the existing Norfolk/Southern railroad line. Two new commuter rail stations, one near the Route 234 Bypass and another near Route 29 at Gainesville, provide access.</p>	<p>Overall poor performance relative to almost all of the highway and transit MOEs.</p>	<p>Study Team – Drop TAC – Retain PAC - _____</p>

TRANSPORTATION STRATEGIES TO BE EVALUATED

The transportation strategies recommended to be evaluated as part of Screen 2 are described on the following pages.

Strategy #1 General Purpose Lanes and HOV

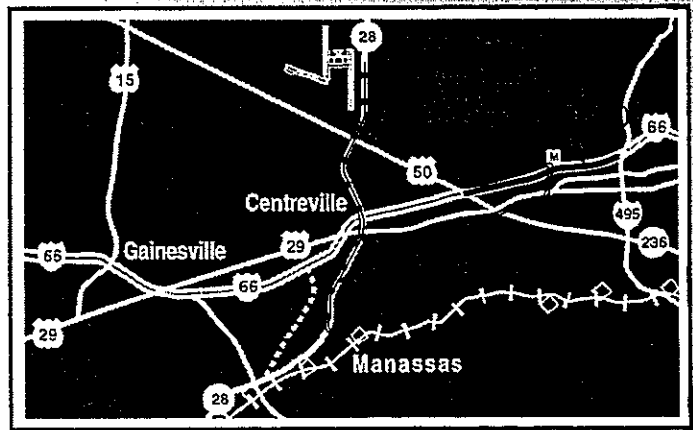
This strategy is primarily highway improvements. One general purpose lane would be added in each direction between I-495 and Route 50. In addition reversible, barrier-separated HOV lanes would be added to I-66 between I-495 and Gainesville. The HOV lanes would extend west from Gainesville on Route 29 through the intersection of Route 15. Route 50 would be widened to a six or eight-lane arterial from I-495 west to Route 28 and configured as a "super-arterial" with grade separations at most cross street intersections.



Strategy #2 General Purpose Lanes and Light Rail

This strategy would combine additional general purpose lanes on I-66 with light rail service focused on the existing Metrorail terminus at Vienna.

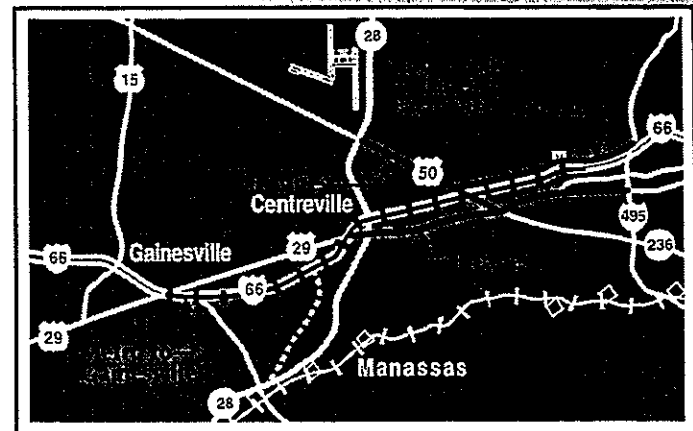
I-66 would be widened to include an additional general purpose lane in each direction between I-495 and Route 50. Light rail service would consist of two lines: one connecting the Manassas area to the Vienna Metrorail station, and one connecting the Dulles Airport area to the Vienna Metrorail station.



Strategy #3 General Purpose Lanes and Metrorail

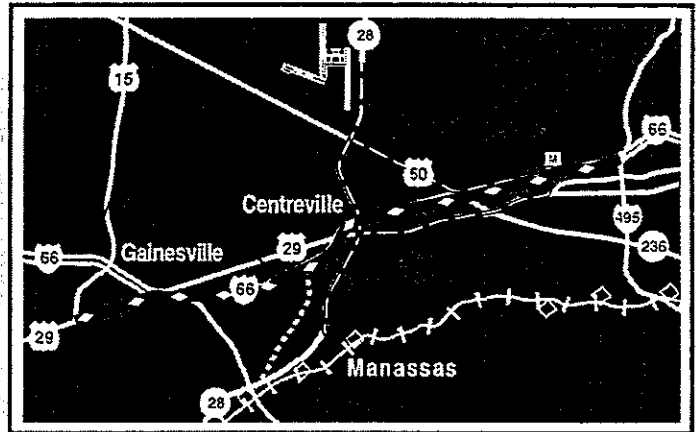
The improvements to I-66 would add one additional general purpose lane in each direction between I-495 and Route 50. Route 50 would be widened to a six or eight-lane arterial from I-495 west to Route 28 and configured as a "super-arterial" with grade separations at most cross street intersections.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Gainesville with a number of intermediate stations.



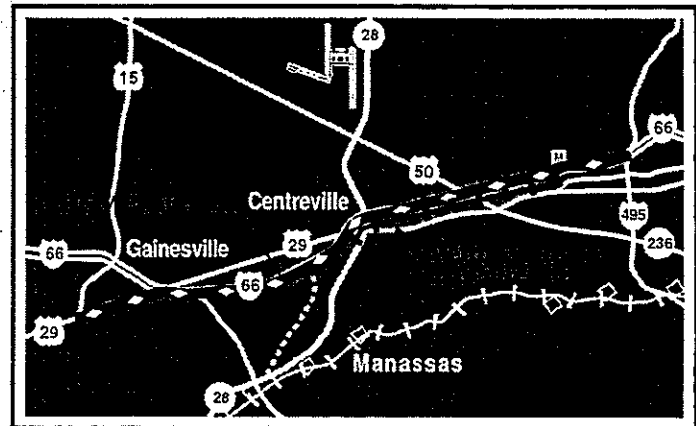
Strategy #4 HOV and Light Rail

This strategy combines reversible, barrier-separated HOV lanes on I-66 with light rail lines to Route 28/50 and Manassas serving the existing Metrorail terminus at Vienna. HOV would also be extended from I-66 at Gainesville along Route 29 through the Route 15 intersection.



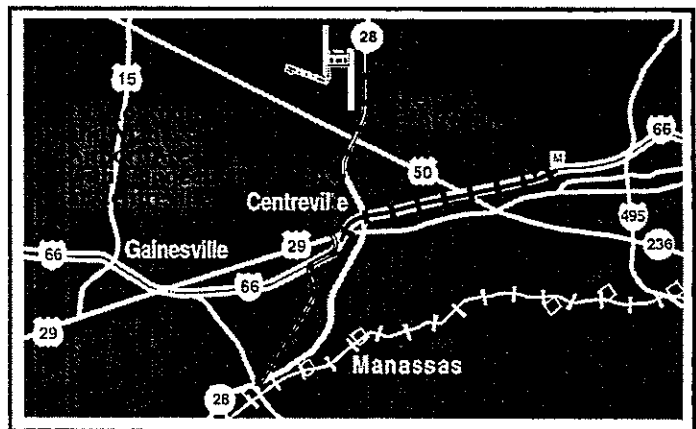
Strategy #5 HOV and Metrorail

This strategy combines reversible, barrier-separated HOV lanes on I-66 with an extension of the existing Metrorail system to Centreville. HOV would also be extended from I-66 at Gainesville along Route 29 through the Route 15 intersection.



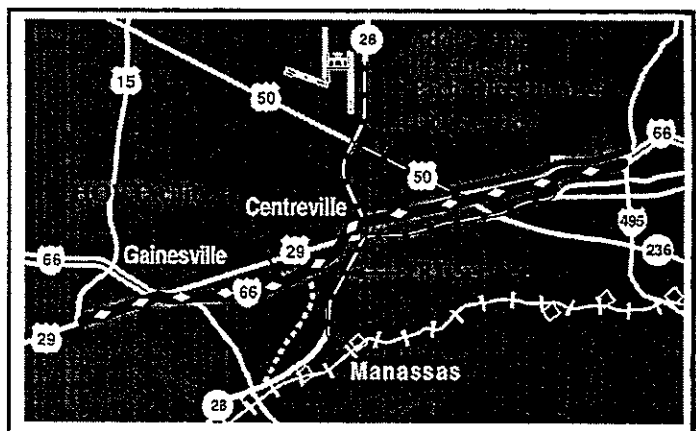
Strategy #6 Light Rail and Metrorail

This strategy tests the effectiveness of extending Metrorail to Centreville with a light rail connection to the north and south from the Metrorail terminal station. The southern light rail line would follow the Route 28 Bypass south to the vicinity of the Manassas Airport. The northern light rail line would follow Stone Road and Route 28 north to the vicinity of Dulles Airport.



Strategy #7 General Purpose Lanes, HOV and Light Rail

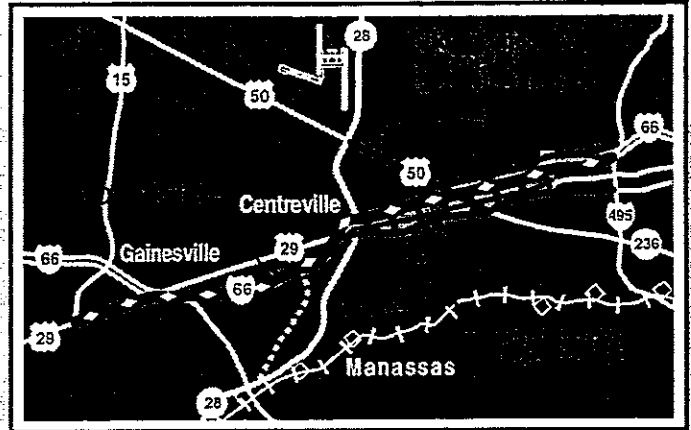
This strategy would combine additional general purpose lanes and reversible, barrier-separated HOV lanes on I-66 with light rail lines to Route 28/50 and Manassas serving the existing Metrorail terminus at Vienna.





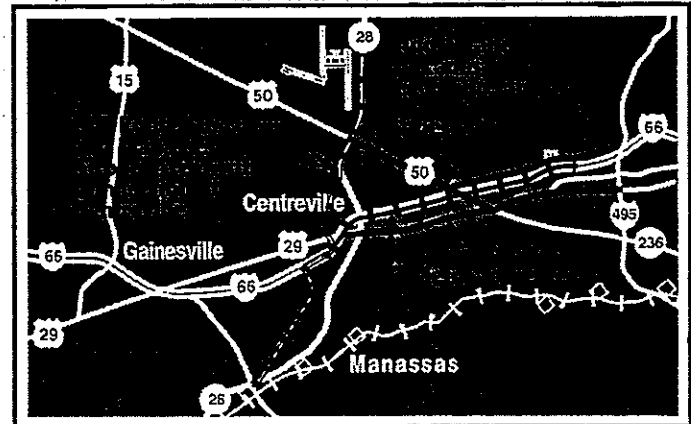
Strategy #8 General Purpose Lanes, HOV and Metrorail

This strategy combines additional general purpose lanes on I-66, Route 29 and Route 50 and reversible, barrier-separated HOV as described in Strategy #1 with the extension of the existing Metrorail system to Centreville.



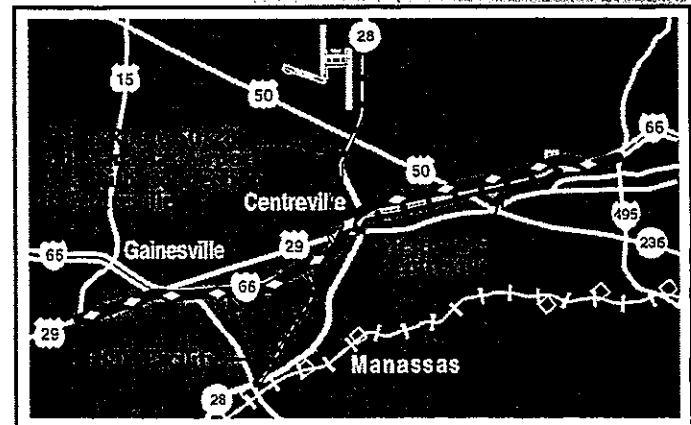
Strategy #9 General Purpose Lanes, Light Rail and Metrorail

This strategy combines additional general purpose lanes on I-66, Route 29 and Route 50 with light rail service focused on an extended Metrorail terminus station at Centreville. The southern light rail line would follow the Route 28 Bypass south to the vicinity of the Manassas Airport. The northern light rail line would follow Stone Road and Route 28 north to the vicinity of Dulles Airport.



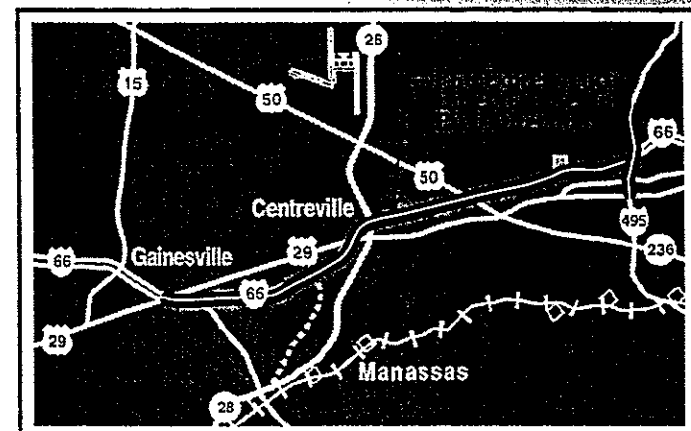
Strategy #10 HOV, Light Rail and Metrorail

This strategy combines reversible, barrier-separated HOV with light rail lines to Route 28/50 and Manassas serving an extended Metrorail terminus station at Centreville. The southern light rail line would follow the Route 28 Bypass south to the vicinity of the Manassas Airport. The northern light rail line would follow Stone Road and Route 28 north to the vicinity of Dulles Airport.



Strategy #11 I-66 Express/Local

This strategy would widen I-66 to six lanes in each direction with an express/local configuration. This strategy would also assume that the Beltway is widened to six lanes in each direction with an express/local configuration consistent with the Recommended Strategy Package in the January 1997 Capital Beltway Study MIS Results Report.



Strategy #12 Super Bus

This strategy would consist of significant bus system improvements that include expanding existing service, providing new service between various origins and destinations, reducing time between buses, and increasing the frequency of service on Metrorail to Vienna. This strategy is intended to represent a more flexible transit improvement that could better serve the travel patterns in the corridor.

Strategy #13 Highway Plan

This strategy would include selected roadway improvements that are part of the Fairfax County, Loudoun County, and Prince William County Comprehensive Plans but are not in the region's constrained long range plan. Improvements to be included in the strategy will be defined in consultation with county staff. Preliminary recommendations for inclusion in this strategy include the following roadways.

- Proposed Tri-County Parkway
- Proposed Stone/Braddock Road Connector
- Proposed Route 234 Bypass north of I-66

Strategy #14 Generic Rail to Gainesville

This strategy would put a fixed rail system in the median of I-66 between the Vienna Metrorail station and Gainesville. The rail system may be directly compatible with Metrorail or may be a different technology requiring a transfer at Vienna.

Strategy #15 Virginia Railway Express

This strategy would extend VRE service to Gainesville. This element could be combined with any of the strategies defined above.

GET INVOLVED

We want to hear from you!



Call the I-66 HOTLINE

1-800-811-4661

(Device for the hearing impaired: 1-800-307-4630)

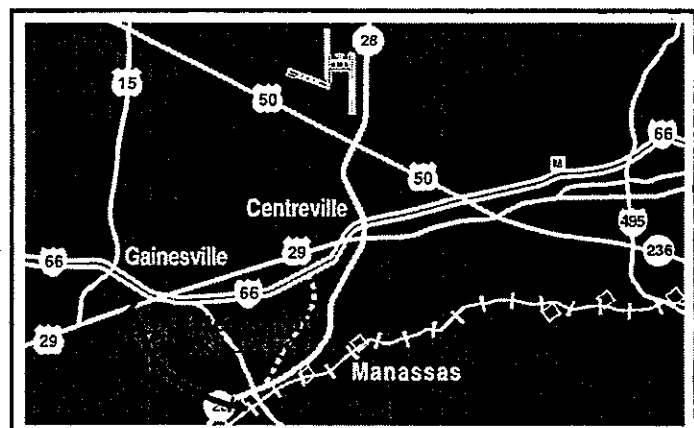
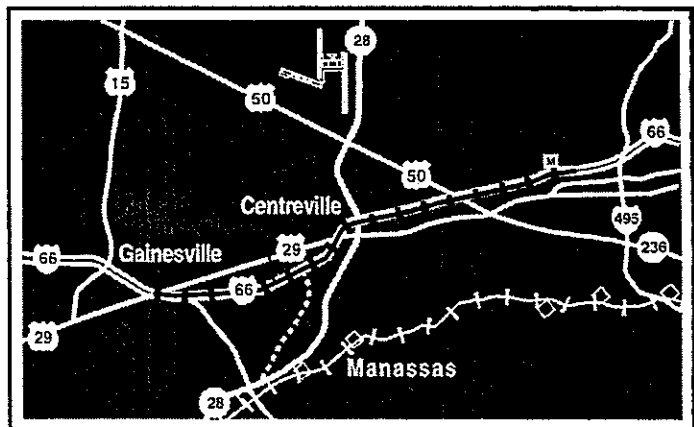


Write to us using the enclosed
comment sheet



Visit the I-66 Corridor MIS web site:

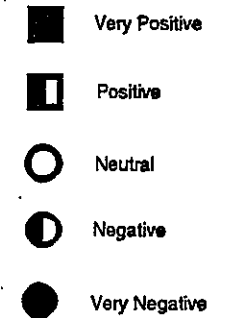
<http://www.vdot.state.va.us/proj/66x.html>



SCREEN 2A TRAVEL DEMAND EVALUATION OF STRATEGIES
SUMMARY EVALUATION OF KEY ATTRIBUTES

EVALUATION CRITERIA	MEASURE OF EFFECTIVENESS	ATTRIBUTE	SOURCE TABLE REFERENCE	CLRP	Enhanced Base	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SOV+HOV+ LRT	8 SOV+HOV+ Metro/C	9 SOV+LRT+ Metro/C	10 HOV+LRT+ Metro/C	11 Express Local	12 Super Bus	13 County Highway	14 Metro/G	15 VRE
GOAL #1 - ACCOMMODATE EXISTING AND FUTURE MOBILITY DEMAND																				
Roadway Traffic Operations	Level of Service on Primary Study Area Roadways	PM Peak Period Directional Lane Miles with Volume to Capacity Ratio = 1.20 or Greater	Table 1	○	○	■	■	○	■	■	○	■	■	○	■	■	○	■	○	○
		PM Peak Period Directional Lane Miles with Volume to Capacity Ratio = 1.00 or Greater	Table 1	○	○	○	○	○	■	○	○	○	■	○	○	○	○	○	○	○
		PM Peak Hour Volume to Capacity Ratio at North-South Screenline West of Fairfax City	Table 4 Summary Screenline 2 (total)	○	○	■	■	■	■	■	○	■	■	■	■	■	○	○	○	○
		PM Peak Hour Volume to Capacity Ratio at East-West Screenline North of I-66	Table 4 Summary Screenline 10 (total)	○	○	■	○	■	■	■	■	■	■	■	■	○	■	■	■	○
	Vehicle Miles of Travel on the Primary Study Area Roadways	2020 Average Daily Vehicle Miles of Travel	Table 5-1	○	○	●	○	●	○	○	○	○	○	○	○	○	○	○	○	○
	Vehicle Hours of Travel on the Primary Study Area Roadways	2020 PM Peak Period Vehicle Hours of Travel	Table 6-1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Vehicle Hours of Delay on the Primary Study Area Roadways	2020 Average Daily Vehicle Hours of Delay	Table 5-1	○	○	■	○	○	○	○	○	■	■	○	○	○	○	○	○	○
		PM Peak Period Effective Speed	Table 6-1	○	○	■	○	■	○	○	○	■	■	■	○	■	○	■	○	○
	Vehicle Occupancy	Home Based Work Trip Vehicle Occupancy at North-South Screenline	Table 7-1 Screenline 2	○	○	○	○	○	■	■	○	■	○	○	○	○	○	○	○	○
Transit System Ridership	Transit Patronage Forecasts by Mode	Total Corridor Related Transit Trips	Table 8-1	○	○	○	■	■	■	■	■	■	■	■	■	○	■	○	■	○
	Primary Study Area Mode Split	Home Based Work Corridor Related Transit Trips	Table 9-2	○	○	○	■	■	■	■	■	■	■	■	■	○	■	○	■	○
		Home Based Work Corridor to Core Transit Trips	Table 9-2	○	○	○	■	■	■	■	■	■	■	■	■	○	■	○	■	■
	New Transit Riders	Total Regional Transit Riders	Table 8-1	○	○	○	■	○	■	○	■	■	○	■	■	○	○	○	○	○
Mobility	Person Throughput	Daily Person Trips Crossing North-South Screenline West of Fairfax City	Table 10 Screenline 2	○	○	■	■	■	■	■	■	■	■	■	■	○	■	■	■	○
GOAL #2 - IMPROVE REGIONAL ACCESS TO I-66 CORRIDOR ACTIVITY CENTERS AND IMPROVE ACCESS FROM THE I-66 CORRIDOR TO THE REGION																				
Accessibility	Door-to-Door Transit and Vehicle Travel Times Between Representative Origin-Destination Pairs Including Reverse Commutes	Composite General Purpose Travel Times	Table 11-B	○	○	■	■	■	■	■	■	■	■	■	■	○	■	■	■	○
		Composite Transit Travel Times	Table 11-A	NA	○	■	■	■	■	■	■	■	■	■	■	○	■	■	■	○
		Composite HOV Travel Times	Table 11-C	○	○	■	○	■	■	○	■	■	■	■	■	○	■	○	○	○
Reverse Commute Accessibility	Number of Reverse Commute Transit Trips Served	Home Based Work Reverse Commute to Corridor Transit Trips	Table 8-2	○	○	○	■	■	■	■	■	■	■	■	○	■	○	■	○	○

LEGEND



NOTE: All evaluations are relative to the Enhanced Baseline Strategy.

TECHNICAL APPENDIX

Pages 13 - 30 provide detailed descriptions of each of the strategies along with a description of the positive and negative travel demand performance.

Pages 31 - 32 provide maps of screenline locations.

Page 33 illustrates AM Peak Period Lane Configuration on I-66.

STRATEGY: BASELINE (CLRP)

DESCRIPTION: The Baseline consists of the highway and transit improvements contained in the currently adopted (July 1997) Constrained Long Range Transportation Plan (CLRP) for the Metropolitan Washington Region.

POSITIVES: All Baseline elements are fully fundable with current cost and income assumptions.

NEGATIVES: This strategy provided the lowest overall level of performance of the strategies tested.

- ☐ Highest values of PM peak period directional congestion
167.9 lane-miles with a V/C ratio > 1.20
486.6 lane-miles with a V/C ratio > 1.00
- ☐ Lowest total corridor related daily transit trips (48,800).

RECOMMENDATION: Retain for Screen 2B as basis for comparison to other more promising options.

STRATEGY: ENHANCED BASELINE

DESCRIPTION: The Enhanced Baseline serves as the basis for comparison to all other strategies. It consists of low cost, TSM and TDM type improvements to the Baseline. The Enhanced Baseline tests increased bus service in the central and western portions of the study area (peak hour buses increase from 55 to 87, with commensurate increases in bus-hours and bus-miles), with no changes in lane-miles of highway capacity.

POSITIVES:

- ☐ This strategy showed relatively modest improvements in peak hour traffic congestion in comparison to the Base Case
165.4 vs. 167.9 lane-miles with $V/C > 1.20$
470.7 vs. 486.6 lane-miles with $V/C > 1.00$.
- ☐ Total corridor related transit trips increased significantly to 59,500 per day versus 48,800 for the Baseline.

NEGATIVES:

Major traffic congestion remained throughout much of the study area.

- ☐ Composite travel times for general purpose travel, transit travel, and HOV travel do not change from the values associated with the CLRP Baseline.

RECOMMENDATION: Retain for Screen 2B as the basis for comparison to other more capital intensive options.

STRATEGY: #1 - GENERAL PURPOSE LANES AND HOV

DESCRIPTION: Strategy #1 combines reversible, barrier-separated HOV 2+ lanes on I-66 with additional general-purpose lanes on I-66, Route 50, and Route 29.

The HOV component adds two barrier-separated, peak-period, peak direction HOV lanes to I-66 from I-495 to Gainesville, and continues HOV in the median of Route 29 to Route 15. This component adds 25.9 lane-miles of barrier separated HOV.

I-66 general purpose lane improvements extend from I-495 to Route 50. The existing concurrent flow HOV lanes convert to SOV lanes plus one additional general purpose travel lane in each direction is assumed. The resulting cross-section is 4 SOV + 2 HOV lanes in the peak direction along the I-66 mainline from I-495 to Gainesville.

Other general purpose travel lane improvements include widening two arterials, Routes 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 to six lane facilities with grade separations at most cross street intersections (referred to as "super-arterials.") This strategy adds approximately 84 lane-miles of general purpose travel lane capacity.

POSITIVES:

- ☐ Improved peak period congestion levels relative to Enhanced Base 165.4 to 135.0 lane-miles with V/C > 1.20 (third best result of any strategy tested)
470.7 to 470.4 lane-miles with V/C > 1.00.
- ☐ V/C ratio at Screenline 2 drops from 1.18 to 1.04 and at Screenline 1 from 1.42 to 1.34 (second best result of any strategy tested).
- ☐ Substantial improvement in person throughput (641,600 vs. 570,300)
- ☐ Improves peak period effective speed
- ☐ V/C at Screenline 10 drop from 1.11 to 1.04 (tied with Strategy #8 for second best Screen 2A results).
- ☐ Composite travel times drop for general purpose from 675 to 591, for transit from 791 to 708, and for HOV from 522 to 424. This strategy produced the lowest HOV composite travel time.
- ☐ Restructured bus routes to use the HOV facility allows decrease in peak hour bus requirements from 87 to 77 relative to Enhanced Baseline.

NEGATIVES:

- ☐ Insignificant change in total corridor related transit trips (59,600) compared to the Enhanced Baseline (59,500)
- ☐ Relatively modest diversions from VRE (200 per day) and all-bus trips (400 per day) to Metrorail (700 per day) compared to Enhanced Baseline values.

RECOMMENDATION: Retain for Screen 2B analysis due to very positive effects upon reductions in peak period highway congestion.

STRATEGY: #2 - GENERAL PURPOSE LANES AND LIGHT RAIL TRANSIT

DESCRIPTION: Strategy #2 combines additional general purpose lanes on I-66 with a three line LRT system connecting Manassas, Centreville, Dulles Airport, and the Vienna/Fairfax-GMU Metrorail station.

This strategy adds one general purpose travel lane in each direction to I-66 between I-495 and Route 50. The strategy retains the existing concurrent flow HOV 2+ lane along I-66. The resulting I-66 cross-section shows 4 general purpose (SOV) lanes and 1 HOV 2+ lane during the peak period in the peak direction, and 5 general purpose (SOV) lanes during off-peak. In contrast to Strategy #1, no improvements would be made to either Route 29 or Route 50. This strategy adds 29 lane-miles of general purpose travel lane capacity.

A three route Light Rail Transit (LRT) network connects: (1) Manassas to the Vienna/Fairfax-GMU Metrorail Station via Route 28 and Route 29; (2) Dulles Airport to the Vienna/Fairfax-GMU Metrorail Station via Route 28, Route 50, the Fairfax County Parkway, and I-66; and (3) the Manassas area and Dulles Airport along Route 28. Consideration of a high capacity transit service in the north-south alignment along Route 28 generally conforms to the Fairfax County Comprehensive Plan. The LRT element totals 39.7 route miles and 28 LRT stations.

POSITIVES:

- ☐ Directional lane-miles with V/C > 1.20 drop from 165.4 to 161.7
- ☐ Third highest total corridor related transit ridership (76,400 riders per day) of any strategy tested in Screen 2A.
- ☐ Tied for the highest total daily reverse commute trips to corridor (4,200 trips per day) with three other strategies (#4, #7, and #10), all of which also include LRT elements.

NEGATIVES:

- ☐ Directional lane-miles with V/C > 1.00 increase from 470.7 to 496.2.
- ☐ Some negative impacts on predicted highway congestion indices; V/C ratio across Screenline 10 increased slightly, from 1.11 to 1.13.
- ☐ Predicted congestion levels for the north-south oriented travel Screenlines 10 and 11 are worse for this strategy than for any other tested in Screen 2A.

RECOMMENDATION: Drop from further consideration due to overall mixed / poor performance relative to Enhanced Baseline and other strategies which incorporate the same modal elements.

STRATEGY: #3 - SOV + METRORAIL TO GAINESVILLE

DESCRIPTION: Strategy #3 combines adding one additional general purpose (SOV) lane to I-66 with additional general-purpose lanes on Route 29 and Route 50, and a Metrorail extension from Vienna/Fairfax-GMU to Gainesville.

This scenario gives I-66 four general purpose lanes and one HOV 2+ lane during the peak period in the peak direction, and 5 general purpose lanes during off-peak periods between I-495 and Route 50. Other general purpose travel lane improvements include widening two arterials, Routes 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 to six lane facilities with grade separations at most cross street intersections (referred to as "super-arterials.") This strategy adds approximately 50 lane-miles of general purpose travel lane capacity.

Metrorail (in the median of I-66) extends from the Vienna/Fairfax-GMU station to a new terminal station near Gainesville. This represents an additional 20.6 route miles of Metrorail, with six new stations assumed; in the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, Centreville, Route 234/NVCC, and Gainesville. Station locations generally conform to the Fairfax County and Prince William County Comprehensive Plans.

- POSITIVES:**
- ☐ Mixed effects upon peak highway congestion relative to Enhanced Baseline. Directional lane-miles with V/C ratio >1.20 (165.6 vs. 165.4 - EB) and >1.00 (479.2 vs. 470.7 - EB) remain essentially the same.
 - ☐ Overall V/C ratios across Screenline 2 decline from 1.18 to 1.06, and Screenline 10 from 1.11 to 1.05.
 - ☐ One of the two highest volumes of total transit trips to the regional core (27,600 vs. 17,500 for the Enhanced Baseline) and a total corridor related transit ridership of 71,300 persons per day.
 - ☐ Highest person throughput (656,600 daily person trips) across Screenline 2 of any strategy tested in Screen 2A.

- NEGATIVES:**
- ☐ Some negative impacts on predicted levels of highway congestion relative to the Enhanced Baseline, with the overall V/C ratio on some east-west travel screenlines slightly higher than for the Enhanced Baseline (Screenline #3 is 0.96 vs. 0.92 and #4 is 1.07 vs. 1.04).
 - ☐ Rail extension to Gainesville, as compared to an extension to Centreville in Strategies #5, #6, #8, #9, or #10, resulted in 4,000 additional riders per day with an additional approximately 10 miles of trackage and two more stations.
 - ☐ End of line rail ridership on rail extension from Centreville to Gainesville is substantially less than that observed on other end of line Metrorail segments (see table on following page).

RECOMMENDATION: Drop from further consideration due to relatively small increase in rail ridership associated with rail extension to Gainesville.

COMPARISON OF END-OF-LINE METRORAIL RIDERSHIP

END OF LINE STATION	INTERIM STATION	SEGMENT LENGTH (MILES)	RIDERS ON SEGMENT	END OF LINE RIDERS	YEAR OF ANALYSIS	RIDERS/ROUTE MILE
Gainesville	Vienna	19.46	41,500	4,900	2020	2,130
Centreville	Vienna	10.52	35,500	14,600	2020	3,380
Shady Grove	White Flint	7.19	44,600	19,100	1990	6,207
Vienna	East Falls	9.40	47,300	17,900	1990	5,031
New Carrollton	Deanwood	5.33	32,800	18,100	1990	6,154
Addison Road	Benning	5.00	23,600	10,500	1990	4,716

Source: KPMG and BRW, Inc.

STRATEGY: #4 - HOV AND LIGHT RAIL

DESCRIPTION: Strategy #4 combines reversible, barrier-separated HOV 2+ lanes on I-66 and Route 29 with a three line LRT system connecting Manassas, Centreville, Dulles Airport, and the Vienna/Fairfax-GMU Metrorail station.

The HOV component removes the existing I-66 HOV lanes, adds to I-66 two barrier-separated, peak-period, peak direction HOV lanes to I-66 from I-495 to Gainesville, and continues HOV in the median of Route 29 to Route 15. The resulting future cross-section along I-66 east of Route 50 shows three general purpose (SOV) lanes and two HOV 2+ lanes during the peak period in the peak direction. This component adds 25.9 lane-miles of barrier separated HOV.

A three route Light Rail Transit (LRT) network connects: (1) Manassas to the Vienna/Fairfax-GMU Metrorail Station via Route 28 and Route 29; (2) Dulles Airport to the Vienna/Fairfax-GMU Metrorail Station via Route 28, Route 50, the Fairfax County Parkway, and I-66; and (3) the Manassas area and Dulles Airport along Route 28. Consideration of a high capacity transit service in the north-south alignment along Route 28 generally conforms to the Fairfax County Comprehensive Plan. The LRT element totals 39.7 route miles and 28 LRT stations.

POSITIVES:

- ☐ Improved highway system performance relative to the Enhanced Baseline. Directional lane-miles with V/C > 1.20 drop from 165.4 to 155.1 and lane-miles with V/C > 1.00 drop from 470.7 to 460.8.
- ☐ Overall V/C ratio at Screenline 2 improved from 1.18 to 1.14 and at Screenline 10 from 1.11 to 1.05.
- ☐ Second highest volume of corridor related transit trips (77,700 riders per day).
- ☐ Tied for the highest percentage of home-based work trips made by transit (8.1%) with Strategy #6.

NEGATIVES:

- ☐ Overall V/C ratio of 1.22 at Screenline 8 is the worst for all of the Screen 2A strategies tested, and is slightly worse than the Enhanced Baseline V/C ratio at this same location of 1.19.

RECOMMENDATION: Drop from further consideration due to mixed performance relative to both the Enhanced Baseline and to other strategies incorporating the same modal elements.

STRATEGY: #5 - HOV PLUS METRORAIL TO CENTREVILLE

DESCRIPTION: Strategy #5 combines reversible, barrier-separated HOV 2+ lanes on I-66 with an extension of Metrorail to Centreville.

The HOV component removes the existing I-66 HOV lanes, adds two barrier-separated, peak-period, peak direction HOV lanes to I-66 from I-495 to Gainesville, and continues HOV in the median of Route 29 to Route 15. The resulting future cross-section along I-66 east of Route 50 shows three general purpose (SOV) lanes and two HOV 2+ lanes during the peak period in the peak direction. This component adds 25.9 lane-miles of barrier-separated HOV.

Metrorail (in the median of I-66) extends from the Vienna/Fairfax-GMU station to a new terminal station near Route 28 at Centreville. This represents an additional 10.5 route miles of Metrorail, with four new stations assumed; in the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, and Centreville. Station locations generally conform to the Fairfax County and Prince William County Comprehensive Plans.

POSITIVES:

- ☐ Modest improvements in the performance of the highway system. Directional lane-miles with V/C > 1.20 declined from 165.4 to 158.9.
- ☐ Several screenline V/C ratios improved slightly: Screenline 2 from 1.18 to 1.15, and Screenline 10 from 1.11 to 1.06.
- ☐ 23,900 corridor transit trips to the regional core. This compares very favorably to the Metrorail extensions to Gainesville as in Strategy #3 - 25,800 and Strategy #14 - 25,900, which had almost twice the route-miles.
- ☐ End-of-line Metrorail ridership performance compares favorably to observed 1990 end of line activity.
- ☐ One of the best performers in improving composite transit travel time (709 vs. 791 for EB) and composite HOV travel time (432 vs. 522 for EB).
- ☐ 17,000 new Metrorail riders per day.

NEGATIVES:

- ☐ Overall highway system performance is essentially a "wash." Lane-miles with V/C > 1.00 increase slightly from 470.7 to 476.8, as do average daily vehicle hours of delay (117,300 vs. 120,700).
- ☐ Transit performance is good, although not as good as other strategies which incorporate LRT elements.

RECOMMENDATION: Retain for Screen 2B analysis due to significant increases in Metrorail ridership and other transit performance measures.

STRATEGY: #6 - LIGHT RAIL AND METRORAIL TO CENTREVILLE

DESCRIPTION: Strategy #6 combines a Metrorail extension connecting at Centreville to an LRT line linking Dulles Airport and Manassas Airport.

Metrorail extends in the median of I-66 from the Vienna/Fairfax-GMU station to a new terminal station near Route 28 at Centreville. This represents an additional 10.5 route miles of Metrorail, with four new stations assumed; in the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, and Centreville. Station locations generally conform to the Fairfax County and Prince William County Comprehensive Plans.

The LRT line connects to the Metrorail extension at Centreville. From this union with Metrorail, the southern LRT line follows the alignment of the proposed Route 28 Bypass south to the Manassas Airport. The northern LRT line follows Stone Road to Route 28 then to Dulles Airport. A high capacity transit service along the Route 28 corridor generally conforms to the Fairfax County Comprehensive Plan. This strategy includes approximately 20.1 route-miles of LRT service with 14 LRT stations.

POSITIVES:

- ☐ Fourth highest total corridor related transit trips (75,200 per day) of any of the Screen 2A strategies tested.
- ☐ Tied for first (with Strategy #4) for the highest percentage of home-based corridor work trips made by transit (8.1%).
- ☐ Produced the third highest percentage of home-based work trips from the study corridor to the regional core carried by transit (46.3%).
- ☐ The V/C ratio at Screenline 10 improved from 1.11 to 1.07.

NEGATIVES:

- ☐ Highway system performance degraded compared to the Enhanced Baseline.
- ☐ Directional lane-miles with V/C > 1.20 increased from 165.4 to 178.8 and lane-miles with V/C > 1.00 increases from 470.7 to 495.6.

RECOMMENDATION: Drop from further consideration due to mixed performance relative to Screen 2A MOEs. Other strategies incorporate the same transit modal elements with better results.

STRATEGY: #7 - SOV + HOV + LRT

DESCRIPTION: Strategy #7 combines adding general purpose travel lanes and reversible, barrier-separated HOV lanes to I-66, with a three line LRT system connecting Manassas, Centreville, Dulles Airport, and the Vienna/Fairfax-GMU Metrorail station.

The HOV component removes the existing I-66 HOV lanes, adds to I-66 two barrier-separated, peak-period, peak direction HOV lanes from I-495 to Gainesville, and continues HOV in the median of Route 29 to Route 15. It also adds one general purpose travel lane in each direction to I-66 from I-495 to Route 50. The I-66 cross-section shows 4 general purpose lanes and two HOV reversible lanes from I-495 to Gainesville, and 5 general purpose (SOV) lanes during off-peak. No improvements would be made to either Route 29 or Route 50. This component adds 25.9 lane-miles of barrier separated HOV.

A three route Light Rail Transit (LRT) network connects: (1) Manassas to the Vienna/Fairfax-GMU Metrorail Station via Route 28 and Route 29; (2) Dulles Airport to the Vienna/Fairfax-GMU Metrorail Station via Route 28, Route 50, the Fairfax County Parkway, and I-66; and (3) the Manassas area and Dulles Airport along Route 28. A high capacity transit service in the north-south alignment along Route 28 generally conforms to the Fairfax County Comprehensive Plan. The LRT element totals 39.7 route miles and 28 LRT stations.

- POSITIVES:
- ☐ V/C ratio at Screenline 1 from 1.42 to 1.33 (best result of any strategy tested).
 - ☐ Directional lane-miles with V/C > 1.20 drop from 165.4 to 132.2, the lowest value in Screen 2A.
 - ☐ Second lowest value for average daily vehicle hours of delay (111,700 vs. 117,300 for Enhanced Baseline) of any strategy tested, and generates the highest total corridor related transit ridership (78,000 per day).
 - ☐ Tied for the highest number (4,200 per day) of home-based work reverse commute trips to the corridor made by transit with three other Strategies (#2, #4, and #10).
 - ☐ Produced better than average performance relative to improvement in composite travel times for general purpose (611 vs. 675), transit (755 vs. 791), and HOV (432 vs. 522).
- NEGATIVES:
- ☐ Directional lane-miles with V/C > 1.00 increased some from 470.4 to 480.5

RECOMMENDATION: Retain due to good transit performance and improvements to highway level of service. Test cost effectiveness of LRT versus Metrorail beyond current Vienna/Fairfax-GMU terminus. Test versus Strategy #9, to assess LRT alignment options from I-66 south to the Manassas area (i.e., the current Route 28 corridor vs. the Route 28 Bypass).

STRATEGY: #8 - SOV + HOV + METRORAIL TO CENTREVILLE

DESCRIPTION: Strategy #8 combines adding general purpose lanes on I-66, Route 29, and Route 50 with both reversible, barrier-separated HOV lanes along I-66 and a Metrorail extension to Centreville.

The HOV component adds to I-66 two barrier-separated, peak-period, peak direction HOV lanes from I-495 to Gainesville, and continues HOV in the median of Route 29 to Route 15. The existing concurrent flow HOV lanes on I-66 convert to general purpose lanes, resulting in a future cross-section of four general purpose (SOV) lanes plus two HOV 2+ travel lanes in the peak direction from I-495 to Gainesville. This component adds 25.9 lane-miles of barrier separated HOV.

Other general purpose travel lane improvements include widening two arterials, Routes 29 and 50 to six lane facilities with grade separations at most cross street intersections (referred to as "super-arterials.") This strategy adds approximately 84 lane-miles of general purpose travel lane capacity.

Metrorail (in the median of I-66) extends from the Vienna/Fairfax-GMU station to a new terminal station near Route 28 at Centreville. This represents an additional 10.5 route miles of Metrorail, with four new stations assumed; in the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, and Centreville. Station locations generally conform to the Fairfax County and Prince William County Comprehensive Plans.

POSITIVES:

- ☐ Significant improvement in peak period highway congestion levels, and is one of the best strategies for highway system performance.
- ☐ Directional lane-miles with V/C > 1.20 drop from 165.4 to 133.8 and lane-miles with V/C > 1.00 drop from 470.7 to 458.5.
- ☐ Overall V/C ratio at Screenline 2 dropped from 1.18 to 1.03, the lowest of any strategy tested.
- ☐ Overall V/C ratio at Screenline 10 declined from 1.11 to 1.04, and ties with Strategy #1 for the second lowest V/C value for this screenline.
- ☐ Third lowest average daily vehicle hours of delay (112,100 hours).
- ☐ Significant improvement in composite travel times for general purpose (591 vs. 675), transit (706 vs. 791), and HOV trips (424 vs. 522), with the lowest value for HOV composite travel time.
- ☐ Substantial increase in person throughput (653,100 vs. 570,300)

NEGATIVES:

- ☐ Total corridor related transit trips increase only modestly, by 14% (67,700 compared to 59,500). Most other transit oriented strategies carry more total transit passengers.

RECOMMENDATION: Retain for Screen 2B analysis due to the very positive reductions in peak period highway congestion and generally positive transit performance.

STRATEGY: #9 - SOV + LRT + METRORAIL TO CENTREVILLE

DESCRIPTION: Strategy #9 combines adding general purpose lanes to I-66, Route 29 and Route 50 with a Metrorail extension connecting at Centreville to an LRT line linking Dulles Airport and Manassas Airport.

A general purpose lane is added to I-66 from I-495 to Route 50 while maintaining the existing single concurrent flow HOV 2+ lane. The I-66 cross-section between I-495 and Route 50 has four general purpose lanes and one concurrent flow HOV 2+ lane in the peak period, peak direction, and five general purpose lanes during off-peak periods. Other general purpose travel lane improvements include widening Routes 29 and 50 to six lane facilities with grade separations at most cross street intersections (referred to as "super-arterials.") Improvements to I-66, Route 29 and Route 50 total 50 additional lane-miles of general purpose travel lane capacity.

Metrorail extends in the median of I-66 from the Vienna/Fairfax-GMU station to a new terminal station near Route 28 at Centreville; an additional 10.5 route miles of Metrorail, with four new stations assumed; in the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, and Centreville. Station locations generally conform to the Fairfax County and Prince William County Comprehensive Plans.

The LRT line connects to the Metrorail extension at Centreville. From this union with Metrorail, the southern LRT line follows the alignment of the proposed Route 28 Bypass south to the Manassas Airport. The northern LRT line follows Stone Road to Route 28 then to Dulles Airport. A high capacity transit service along the Route 28 corridor generally conforms to the Fairfax County Comprehensive Plan. This strategy includes 20.1 route-miles of LRT service with 14 LRT stations.

- POSITIVES:**
- ☐ Mixed impacts on peak period highway congestion. Directional lane-miles with V/C > 1.20 increased slightly from 165.4 to 168.0, as did lane-miles with V/C > 1.00 (from 470.7 to 475.3).
 - ☐ Overall V/C ratio at Screenline 2 improved from 1.18 to 1.05 (the third best result of any strategy tested).
 - ☐ Overall V/C ratio at Screenline 10 from 1.11 to 1.06.
 - ☐ Fifth highest corridor related transit ridership (75,200).
 - ☐ Second best composite transit travel time. Favorable composite travel times include general purpose (610 vs. 675), transit (659 vs. 791), and HOV (488 vs. 522 for EB).
 - ☐ Substantial increase in person throughput (655,900 vs. 570,300)

- NEGATIVES:**
- ☐ Minor degradations in overall V/C ratios at Screenlines #3, #4, #6, and #9.

RECOMMENDATION: Retain for Screen 2B analysis due to good overall transit performance and to help assess cost-effectiveness of Metrorail and LRT elements in comparison to other multi-modal strategies which incorporate the same modal elements.

STRATEGY: #10 - HOV + LRT + METRORAIL TO CENTREVILLE

DESCRIPTION: Strategy #10 combines reversible, barrier-separated HOV 2+ lanes on I-66 with a Metrorail extension connecting at Centreville to an LRT line linking Dulles Airport and Manassas Airport.

The HOV component removes the existing I-66 HOV lanes, adds two barrier-separated, peak-period, peak direction HOV lanes to I-66 from I-495 to Gainesville, and continues HOV in the median of Route 29 to Route 15. The resulting future cross-section along I-66 east of Route 50 shows three general purpose (SOV) lanes and two HOV 2+ lanes during the peak period in the peak direction. This component adds 25.9 lane-miles of barrier separated HOV.

Metrorail (in the median of I-66) extends from the Vienna/Fairfax-GMU station to a new terminal station near Route 28 at Centreville. This represents an additional 10.5 route miles of Metrorail, with four new stations assumed; in the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, and Centreville. Station locations generally conform to the Fairfax County and Prince William County Comprehensive Plans.

The LRT line connects to the Metrorail extension at Centreville. From this union with Metrorail, the southern LRT line follows the alignment of the proposed Route 28 Bypass south to the Manassas Airport. The northern LRT line follows Stone Road to Route 28 then to Dulles Airport. A high capacity transit service along the Route 28 corridor generally conforms to the Fairfax County Comprehensive Plan. This strategy includes approximately 20.1 route-miles of LRT service with 14 LRT stations.

POSITIVES:

- ☐ Directional lane-miles with V/C > 1.20 drop slightly from 165.4 to 156.9.
- ☐ Overall V/C ratio at Screenline 2 improves only slightly from 1.18 to 1.13.
- ☐ Overall V/C ratio at Screenline 10 improves from 1.11 to 1.06.
- ☐ Composite travel times improve relative to the Enhanced Baseline: 636 vs. 675 for general purpose, 639 vs. 791 for transit (best performance of any Screen 2A strategy tested), and 438 vs. 522 for HOV.

NEGATIVES:

- ☐ Generally mixed results relative to improvement in peak period highway congestion; several other strategies exhibited superior performance.
- ☐ Transit performance MOEs generally no better than average.

RECOMMENDATION: Drop from further consideration due to overall mixed performance. Other strategies incorporate the same modal elements.

STRATEGY: #11 - I-66 EXPRESS / LOCAL

DESCRIPTION: Strategy #11 would widen I-66 to provide six general purpose (SOV) travel lanes in each direction between the Capital Beltway (I-495) and Route 29 at Gainesville with an express/local configuration similar to portions of I-270 in Montgomery County, Maryland.

This strategy also assumes that I-495 would be widened to a total of six general use travel lanes in each direction between the I-95 interchange in Springfield and the Dulles Toll Road with an express/local configuration. This latter assumption is consistent with the Recommended Strategy Package in the Capital Beltway Study MIS Results Report (January 1977). This strategy further assumes the existence of full express ingress/egress points between all interchanges along I-66, with both local-local and express-express connections provided between I-66 and I-495 at their junction. The existing concurrent flow HOV lanes along I-66 would be eliminated under this strategy. This adds 111 lane-miles of additional highway capacity.

POSITIVES:

- ☐ Directional lane-miles with V/C > 1.20 decrease from 165.4 to 156.4
- ☐ Overall V/C ratio at Screenline 2 changes from 1.18 to 1.16, while the overall V/C ratio at Screenline 10 exhibits no change from the Enhanced Baseline value of 1.11.
- ☐ Composite general purpose travel time value of 587 is substantially improved from the value of 675 for the Enhanced Baseline, and represents the lowest value for this MOE of any Screen 2A strategy tested.

NEGATIVES:

- ☐ Directional lane-miles with V/C > 1.00 increase slightly from 470.7 to 471.2.
- ☐ Provision of an additional 111 lane-miles of capacity serves to attract additional trips into the corridor, resulting in an increase in daily VMT from 18,796,000 for the Enhanced Baseline to a value of 20,081,000. This is the highest VMT value associated with any of the strategies tested.
- ☐ Peak period VMT value of 205,200 is similarly the highest value associated with any of the strategies tested.
- ☐ Daily transit ridership of only 59,300 is by far the lowest of any other strategy tested and even slightly lower than the Enhanced Baseline (59,600).

RECOMMENDATION: The analysis of the Screen 2A travel demand indicates that this strategy has both strengths and weaknesses. However, it does represent a design concept that both already exists in the region (along I-270 in Montgomery County) and has been accepted for further study along I-495 in Virginia. In addition, this strategy could support lane management strategies including HOV designations and ITS applications that would improve operational performance. Thus, it is recommended that this option be further analyzed in Screen 2B to determine physical impacts and cost-effectiveness relative to other retained strategies which incorporate both general purpose (SOV) and HOV improvements.

STRATEGY: #12 - SUPER BUS

DESCRIPTION: Strategy #12 consists of significant bus system improvements beyond those assumed as part of the Enhanced Baseline transit element.

This strategy would expand existing bus routes, provide new bus services between various origins and destinations, reduce peak and off-peak bus headways in the corridor, and increase the frequency of service on Metrorail service to Vienna/Fairfax-GMU. The strategy includes additional express bus routes operating on the existing concurrent flow HOV lanes. This strategy represents a flexible over-the-road transit service that could potentially serve the travel patterns in the corridor with a lesser capital investment than an extension of Metrorail service or the construction of LRT lines. This strategy proposes an increase in the number of peak hour buses from the 87 included in the Enhanced Baseline to 137 (a 57.5% increase), with associated increases in daily bus-hours from 610 to 950 (55.7%) and daily bus-miles from 18,100 to 30,100 (66.3%). In addition, approximately 13 lane-miles of highway capacity would be added to the Enhanced Baseline highway network to account for transit access linkages such as the Stone-Braddock Road Connector designed to optimize the potential use of this bus transit oriented strategy.

- POSITIVES:**
- ☐ Overall V/C ratio at Screenline 10 improves from 1.11 to 1.06.
 - ☐ Total daily corridor related transit trips of 65,100 represent a change of 5,600 trips (9.4%) over the Enhanced Baseline.
- NEGATIVES:**
- ☐ No appreciable improvement in highway congestion levels or transit ridership levels relative to the Enhanced Baseline, in spite of significant increases in the total amount of transit service provided. Some decrease in a number of highway performance indicators relative to the Enhanced Baseline.
 - ☐ Directional lane-miles with V/C > 1.20 increases from 165.4 to 168.1, and lane-miles with V/C > 1.00 increases from 470.7 to 484.6.
 - ☐ Overall V/C ratio at Screenline 2 increases from 1.18 to 1.20.
 - ☐ Composite general purpose travel time increases from 675 to 680 (worst value for any strategy tested in Screen 2A).

RECOMMENDATION: Delete from further consideration due to overall poor performance relative to both highway and transit related MOEs in comparison to other Screen 2A strategies tested.

STRATEGY: #13 - COUNTY HIGHWAY PLAN

DESCRIPTION: Strategy #13 includes elements of the adopted county and city comprehensive plans that are not part of the current CLRP. This strategy includes highway improvements designed to accommodate a variety of east-west and north-south oriented travel demands within the study area.

Building upon the CLRP / Enhanced Baseline highway network, this strategy includes a number of roadway improvements which are part of the currently adopted County Comprehensive Plans, but that are not included in the current CLRP. Representative facilities included in this strategy include: a widening of Route 28 from six to eight lanes between I-66 and the Dulles Toll Road in Fairfax County; construction of the Route 28 Bypass / Tri-County Parkway from I-66 north to Route 50 in Fairfax and Loudoun Counties; the improvement of Pleasant Valley Road in Fairfax County from two to four lanes between Route 29 and Route 50; the construction of the Route 234 Bypass in Prince William County between I-66 and the Prince William / Loudoun County line; and the construction of Artemus Road in Prince William County between Route 15 and the Prince William / Loudoun County line. In total, this option adds approximately 238 lane-miles of capacity to the CLRP / Enhanced Baseline highway network (approximately a 12% increase)

POSITIVES:

- ☐ Significant improvements in the operations of the study area highway system relative to the Enhanced Baseline. Peak period directional lane-miles with V/C > 1.20 decreases from 165.4 to 148.5, the second best performance of any of the strategies tested. Similarly, the directional lane-miles with V/C > 1.00 decreases from 470.4 to 388.0, far and away the best performance relative to this MOE of any strategy tested.
- ☐ Most effective in addressing congestion associated with north-south oriented travel demand in the study area.
- ☐ Overall V/C ratio across Screenline 10 drops from 1.11 for the Enhanced Baseline to 0.97 for this strategy, the best performance relative to this MOE of any strategy tested.
- ☐ Lowest value of average daily vehicle hours of delay (103,900 vs. 117,300 for EB).
- ☐ Highest overall PM peak period effective speed (28.2 mph vs. 26.4 mph for EB) of any strategy tested in Screen 2A.

NEGATIVES:

- ☐ No positive impact on daily corridor related transit trips (59,900 vs. 59,500 for EB).
- ☐ Composite general purpose travel time for this strategy of 643 is only 4.7% better than that observed for the EB, with 10 of the 15 strategies examined performing better relative to this MOE.
- ☐ Composite transit travel time value of 774 and the composite HOV travel time value of 510 score very low relative to the performance of the other strategies tested.

RECOMMENDATION: Retain for Screen 2B analysis due to very positive effects upon reductions in peak period highway congestion, particularly north-south oriented travel demands in the central and western portions of the study area.

STRATEGY: #14 - GENERIC RAIL TO GAINESVILLE

DESCRIPTION: This strategy would provide a fixed rail system in the median of I-66 between the Vienna/Fairfax-GMU Metrorail Station and Gainesville.

This service could be either an extension of the Metrorail System, a "Metro-like" rail system, or an LRT system. Depending on the technology and operator selected a transfer to the existing Metrorail service at Vienna/Fairfax-GMU may or may not be required. This strategy was modeled assuming a "Metro-like" rail system with no transfer required at Vienna/Fairfax-GMU. An additional 20.6 route-miles of rail transit service would be provided. Six additional stations were tested at the vicinity of Route 123, Fair Oaks Mall, Stringfellow Road, Centreville, Route 234 / NVCC, and Gainesville. These station locations are in general conformance with the Fairfax and Prince William County Comprehensive Plans.

POSITIVES:

- ☐ Highest value of total daily transit trips from the study corridor to the regional core (27,700 vs. 17,500 for EB) of any of the strategies tested. As would be expected, almost all of this ridership to the core (25,900 trips vs. 14,300 for EB) would be on the "Metro-like" / Metrorail system in the I-66 median.
- ☐ Approximately 47.6% of the total home-based work corridor to core trips would be made by transit; this is the highest observed value of any strategy tested relative to this MOE.

NEGATIVES:

- ☐ Very little impact upon reducing highway congestion in the study area.
- ☐ Directional lane-miles with V/C > 1.20 are projected to increase from 165.4 to 170.0, while lane-miles with V/C > 1.00 are projected to increase from 470.7 to 492.6.
- ☐ Overall V/C across Screenline 2 remains unchanged at 1.18, while the overall V/C ratio across Screenline 10 reduces from 1.11 to 1.07.
- ☐ Average daily vehicle hours of delay are projected to increase from 117,300 for EB to 123,600 for this strategy. This represents the third highest value of average delay for any of the strategies tested.

RECOMMENDATION: Delete from further consideration due to overall poor performance relative to virtually all of the highway related MOEs and the same or superior performance relative to the transit related MOEs of other strategies which incorporate the same modal elements.

STRATEGY: #15 - VIRGINIA RAILWAY EXPRESS (VRE) EXTENSION TO GAINESVILLE

DESCRIPTION: This strategy would extend VRE service for a distance of approximately 7.5 miles from the current downtown Manassas VRE station to Gainesville using the existing Norfolk/Southern railroad line. Two new commuter rail stations would be provided one in the vicinity of the Route 234 Bypass and the other near Route 29 at Gainesville.

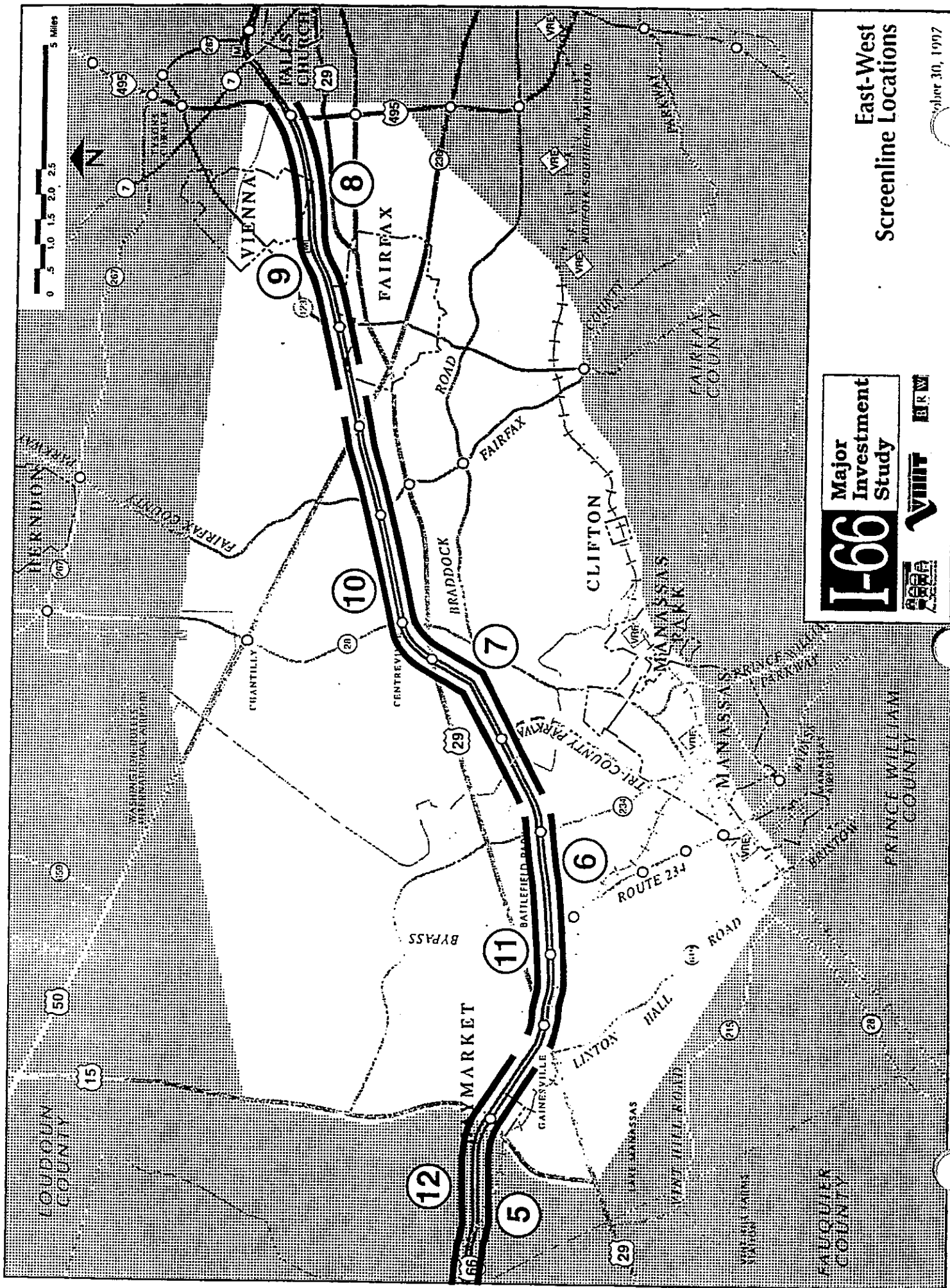
POSITIVES:

- ☐ Total projected corridor related VRE ridership, from 2,200 per day for the Enhanced Baseline to 2,600 per day for this strategy (an increase of 18%).
- ☐ Total corridor related transit trips only increase from 59,500 to 60,000 or about a 0.8% change.

NEGATIVES:

- ☐ Virtually no positive effects relative to the performance of the Enhanced Baseline for any travel demand oriented MOE. Directional lane-miles with $V/C > 1.20$ increases from 165.4 to 173.7 and lane-miles with $V/C > 1.00$ increases from 470.7 to 480.4. Similarly, the overall V/C ratio across Screenline 2 increases from 1.18 to 1.20. The projected incremental daily ridership increase of 400 passengers per day is only about 10% of the projected incremental daily ridership of 4,000 passengers per day associated with extending Metrorail service from Centreville to Gainesville.

RECOMMENDATION: Delete from further consideration due to overall poor performance relative to virtually all of the highway and transit MOEs.



I-66

Major Investment Study

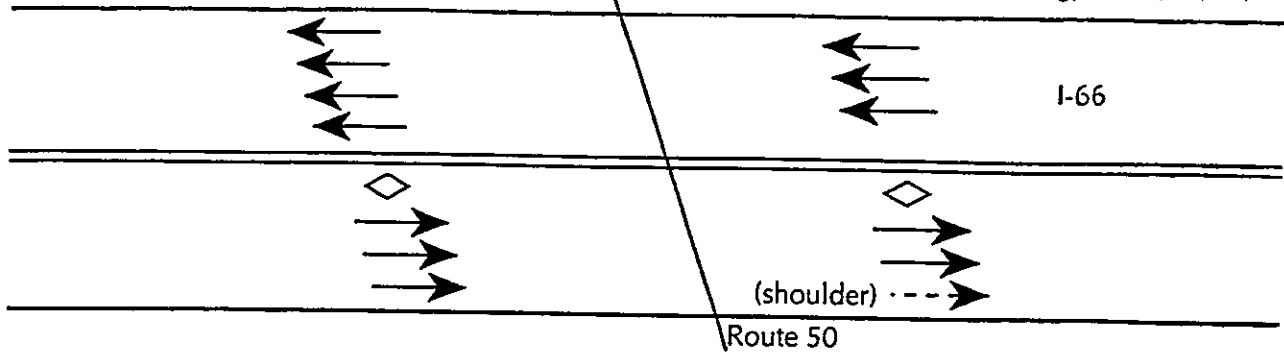
East-West Screenline Locations

VIHT ERW

October 30, 1997

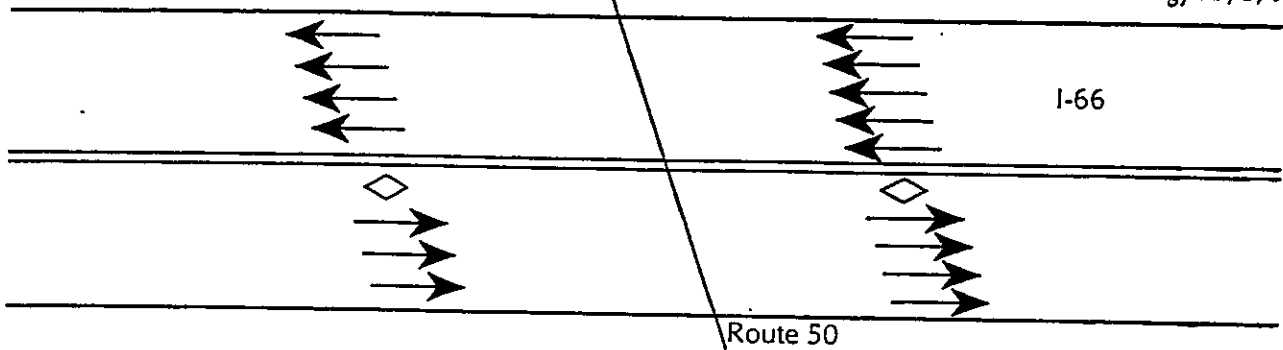
Existing

Baseline Scenario: Strategy #6, 12, 13, 14, 15



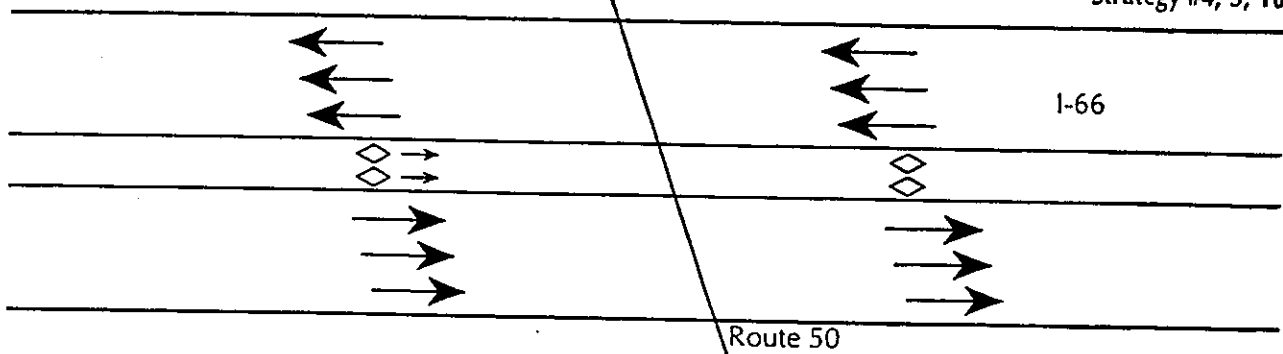
Existing + SOV east of Route 50

Strategy #2, 3, 9



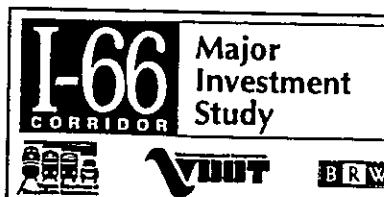
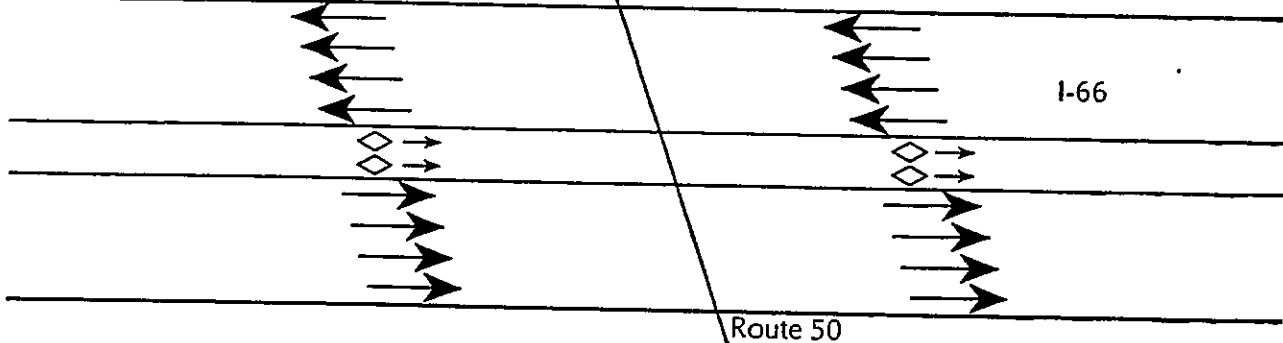
Existing + Barrier Separated, Reversible HOV

Strategy #4, 5, 10



Existing + Barrier Separated, Reversible HOV
+ SOV east of Route 50

Strategy #1, 7, 8



AM Peak Period
Lane Configuration on I-66

October 20, 1997



MEMORANDUM

DATE: December 11, 1997

TO: Technical Advisory Committee
I-66 Major Investment Study

FROM: Project Management Team

RE: Screen 2A Travel Demand Results and Conclusions

The purpose of this memorandum is to present the Screen 2A results and conclusions of the I-66 Project Management Team (PMT). The alternative screening process for the I-66 Corridor MIS is summarized in Figure 1. Screens 1A and 1B have been completed. At the direction of the I-66 Policy Advisory Committee, Screen 2 was divided into Screen 2A and Screen 2B. Screen 2A of the alternative screening process focuses on travel demand and those measures of effectiveness (MOE's) associated with mobility and accessibility. The purpose of dividing Screen 2 was that there were far too many alternatives still under consideration, and that these needed to be reduced to a much more manageable number in order to allow for more in-depth analysis to be conducted within the time and budget constraints of the project.

The PMT presented preliminary conclusions from partial Screen 2A travel modeling results at the November 5, 1997 TAC meeting. Complete modeling results for all Screen 2 strategies and all Screen 2A MOE's were presented at the November 24, 1997 TAC meeting. At the November 24 meeting, the TAC requested recommendations from the PMT. This memorandum presents the Screen 2A conclusions and recommendations of the PMT.

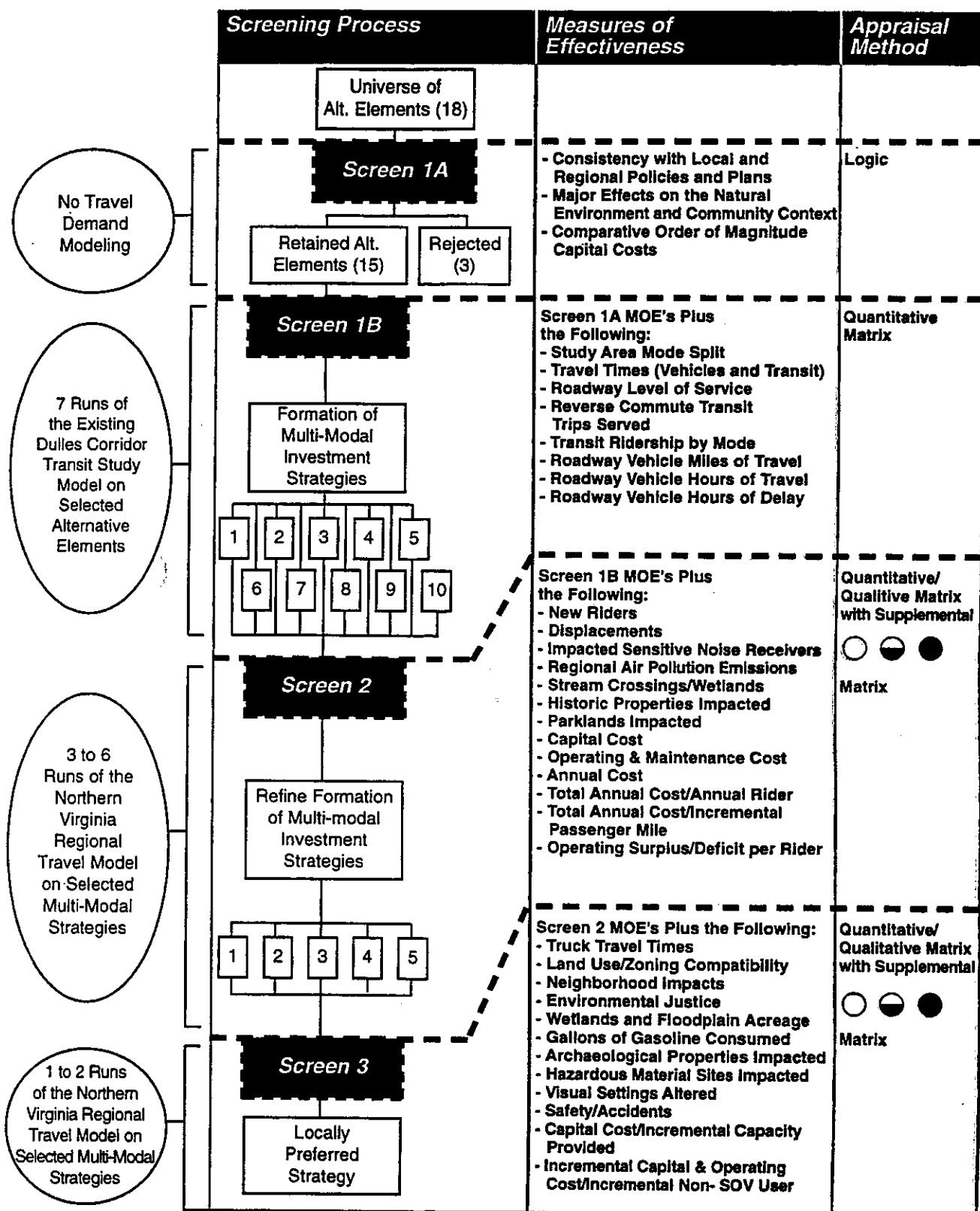
In developing the Screen 2A recommendations, the following principles were used to guide decision making:

1. Each multi-modal strategy should be capable of resolving a specific identified future transportation problem in each involved local jurisdiction. These problems could be related to traffic congestion, lack of highway or transit accessibility, safety, or limitations on development potential.
2. Each multi-modal strategy should, in concert with the ongoing work by VDOT on the Beltway MIS, improve conditions at "the wall" at the junction of I-66 and the Capital Beltway.



Figure 1

Overview of I-66 MIS Alternative Elements/Strategies Evaluation Process



Note: Screen 1B will use MWCOG Land Use Version 5.2. Subsequent screens will use Version 5.3. Fig. 1 #9806-0047

3. Each multi-modal strategy should result in an improvement to the currently observed and/or projected future SOV and HOV traffic operational problems along the I-66 mainline from I-495 west to the area of Route 28. These operational problems relate to volume congestion, lane continuity and the use of the shoulder during peak hours for general purpose traffic.
4. None of the multi-modal strategies should preclude any currently viable alternative action associated with other ongoing transportation planning projects such as the Beltway MIS, the Dulles Toll Road or the Western Transportation Corridor MIS from being implemented.

Complete travel demand modeling results are contained in the "Screen 2A Travel Modeling Results" dated December 8, 1997.

CONCLUSIONS RELATIVE TO SOV CAPACITY

One of the basic conclusions from the preliminary Screen 2A travel demand analysis which was presented at the November 4th TAC meeting was that:

Travel demand in the corridor justifies further consideration of the provision of additional SOV capacity.

A secondary conclusion was that:

Excess SOV travel demand will exist in the corridor even with additional HOV capacity and/or an extension of the Metrorail System.

These conclusions were based primarily on the results of the east-west oriented travel 2020 PM peak hour volume to capacity (V/C) analysis at several representative screenlines: just west of I-495, just west of Fairfax City at the I-66 / Route 50 interchange, at Bull Run, and at Gainesville. In this analysis, the value of "capacity" (i.e., a V/C ratio of 1.00) was defined as the breakpoint between Level of Service "E" and Level of Service "F".

A review of Table 4 in the Screen 2A Travel Modeling Results indicates that this basic conclusion is still valid. What is equally interesting, however, is the effect of the various alternatives tested on the V/C ratios for specific highway facilities. For example, the overall V/C ratio for Screenline 1 just west of I-495 ranges from a value of 1.42 for the Enhanced Baseline to a high of 1.43 and a low of 1.34. Overall then, the total screenline is projected to operate at LOS "F" in the PM peak hour in 2020.

At the facility specific level of analysis, however, westbound I-66 is shown as operating at a reasonably acceptable peak hour level of service across essentially all of the alternatives considered, with V/C ratios ranging from a high of 1.17 to a low of 0.99. The most severe congestion problems (and thus the driving factor in the overall screenline V/C ratio value) were observed on the east-west oriented arterial routes at the northern and southern limits of the defined study area.

The table on the following page presents a summary of this screenline analysis, encompassing all four east-west travel screenlines, and illustrating the V/C ratios associated with the Enhanced Baseline condition, the "Best" alternative, and the "Worst" alternative.

With regard to north-south travel demands, relatively few problems were observed from Route 234 at Manassas west to the study area boundaries, with the overall V/C ratios for Screenlines 5, 6, 11, and 12 being in the range of 0.70 to 0.80 for virtually all of the alternatives which were considered. The County Highway Plan (Strategy #13) typically results in the lowest V/C ratios across these screenlines, particularly for Screenlines 11 and 12 which follow the north side of I-66 from Route 234 west to the study area boundaries.

**SUMMARY OF RANGE OF VOLUME/CAPACITY RATIOS FOR STRATEGIES FOR
EAST-WEST SCREENLINES**
2020 PM Peak Hour / Peak Direction

Number	Screenline	Enhanced Baseline	"Worst" V/C Ratio (and Strategy)	"Best" V/C Ratio (and Strategy)
	Location			
1	West of I-495:			
	• All Roadways	1.42	1.43 - #12, #14	1.34 - #1, #8
	• I-66 Alone	1.11	1.17 - #11	0.99 - #8
	• Other Highways	1.51	1.51 - #12, #14, #15	1.45 - #11, #13
2	West of Rt. 50:			
	• All Roadways	1.18	1.20 - #12, #15	1.03 - #8
	• I-66 Alone	1.24	1.25 - #6, #14, #15	1.11 - #1, #8
	• Other Highways	1.16	1.18 - #12	0.98 - #8
3	Bull Run:			
	• All Roadways	0.92	0.96 - #3, #9	0.84 - #13
	• I-66 Alone	0.72	0.78 - #14	0.66 - #1, #7, #10
	• Other Highways	1.01	1.05 - #3, #9	0.87 - #13
4	Gainesville:			
	• All Roadways	1.04	1.07 - #3, #11	0.75 - #3
	• I-66 Alone	1.08	1.18 - #11	0.93 - #13
	• Other Highways	1.03	1.05 - #9	0.70 - #13

Source: Table 4 of "Screen 2A Travel Model Results" Report

The table on the following page presents a summary of this screenline analysis, encompassing all eight of the north-south travel screenlines, and illustrating the V/C ratios associated with the Enhanced Baseline condition, the "Best" alternative, and the "Worst" alternative.

In the portion of the corridor from the Route 28 Bypass to the U.S. Route 50 interchange with I-66 at Fair Oaks, two different findings are observed relative to the north and south sides of I-66. On the south side of I-66, the overall V/C ratio is typically in the range of 0.84 to 0.92, with only the section of U.S. Route 29 just south of the Centreville interchange with I-66 exhibiting a V/C ratio in excess of 1.10 for any of the alternatives. Conversely, Screenline 10 on the north side of I-66 in this area has an Enhanced Baseline V/C ratio of 1.11, and a range of V/C ratios between 1.13 and 0.97. The County Highway Plan is the only alternative which results in an overall V/C ratio across this screenline of less than 1.00. By far the most congested facilities across this screenline are the Fairfax County Parkway, with V/C ratios ranging between 1.30 and 1.48, and Route 28, with V/C ratios ranging between 1.21 and 1.48. In both instances, the "best" V/C ratio is associated with the County Highway Plan alternative.

The most congested north-south facilities overall are found in the area between Waples Mill Road and the Capital Beltway (I-495). On the south side of I-66 (Screenline 8), the Enhanced Baseline V/C ratio is 1.19, with variations across the alternatives between 1.22 and 1.12. Jermantown Road, Blake Lane, Nutley Street, and Gallows Road are consistently the most heavily congested facilities. On the north side of I-66 (Screenline 9), the Enhanced Baseline V/C ratio is 1.15, with variations across the alternatives between 1.19 and 1.04. Not surprisingly, Jermantown Road, Blake Lane, Nutley Street, and Gallows Road are the most heavily congested facilities across all of the alternatives.

The initial finding that the provision of additional SOV capacity needs to be further considered, even with the provision of additional HOV capacity and/or an extension of the Metrorail system beyond the current Vienna terminus station, is still valid. Overall, the County Highway Plan (Strategy #13) addresses a wide variety of the north-south mobility problems expected to exist in the study area by the year 2020. *Because of its overall effectiveness in addressing both the projected north-south and east-west travel problems, elements of the County Highway Plan Alternative should be considered for inclusion in all of the multi-modal alternatives which are to be subsequently considered in Screen 2B and Screen 3.*

**SUMMARY OF RANGE OF VOLUME/CAPACITY RATIOS FOR STRATEGIES FOR
NORTH-SOUTH SCREENLINES
2020 PM Peak Hour / Peak Direction**

Number	Screenline	Enhanced Baseline	"Worst" V/C Ratio (and Strategy)	"Best" V/C Ratio (and Strategy)
	Location			
5	Outer Corridor South	0.57	0.60 - #12, #13	0.55 - #4, #7
12	Outer Corridor North	0.78	0.78 - #3, #6, #7, #12, #14, #15	0.67 - #13
6	West Corridor South	0.77	0.88 - #11	0.74 - #10
11	West Corridor North	0.79	0.83 - #2	0.59 - #13
7	Central Corridor South	0.91	0.92 - #11	0.84 - #13
10	Central Corridor North	1.11	1.13 - #2	0.97 - #13
8	East Corridor South:			
	• All Roadways	1.19	1.22 - #4	1.12 - #13
	• I-495 NB	1.10	1.17 - #11	1.07 - #3
	• Other Highways	1.25	1.27 - #9, #10	1.14 - #13
9	East Corridor North:			
	• All Roadways	1.15	1.19 - #3, #9	1.04 - #13
	• I-495 NB	0.97	1.09 - #11	0.91 - #13
	• Other Highways	1.28	1.32 - #1	1.12 - #13

Source: Table 4 of "Screen 2A Travel Model Results" Report

Note: Corridor Subarea boundaries are as follows:
Outer - From western study area boundary to U.S. Rt. 15
West - From Old Carolina Road to Route 234
Central - From Route 28 Bypass to U.S. Rt. 50
East - From Waples Mill Road to I-495

CONCLUSIONS RELATIVE TO HOV FACILITIES

A second conclusion based upon review of the initial travel demand analysis results presented at the last TAC meeting was that:

HOV 2+ travel demand in the corridor justifies barrier separated HOV lanes on I-66 from I-495 to approximately Route 234.

The findings of the complete Screen 2A travel demand analysis serve to reconfirm this conclusion. Across all of the east-west screenlines and compared against all of the alternatives, only those options which included consideration of two, barrier-separated HOV lanes from the Beltway to a point west of the Route 28 Bypass were able to accommodate the projected HOV 2+ demand at a reasonable level of service. Conversely, where the existence of two, barrier-separated HOV lanes was considered as part of the alternative definition, the projected V/C ratios at Screenline 1 on the HOV facility were between 0.76 and 0.81. This represents LOS "C" / "D" conditions.

A similar situation was observed at Screenline 2, with extremely congested (LOS "F") conditions (V/C ratios from 1.20 to 1.32) with only a single concurrent flow HOV lane and somewhat less congestion (V/C ratios from 1.05 to 1.11) where the existence of two, barrier separated HOV lanes was assumed.

At Screenline 3 crossing Bull Run, the HOV 2+ demand is projected to have decreased to the point where an acceptable level of service could be provided on the HOV facility with only a single, concurrent flow HOV lane. West of this location, there does not appear to be sufficient demand to warrant further consideration of a barrier separated HOV facility.

Thus, the earlier preliminary conclusion relative to the provision of barrier separated HOV facilities in the study corridor has been reaffirmed by the completion of the Screen 2A travel demand analysis.

CONCLUSIONS RELATIVE TO METRORAIL

Another major preliminary conclusion presented at the November 4th TAC meeting was that:

Forecast rail ridership justifies further consideration of a Metrorail extension to Centreville. An extension of Metrorail beyond Centreville does not appear to be justified within the planning horizon of this study.

The rationale is as follows:

1. The projected incremental change in total daily Metrorail ridership (relative to the Enhanced Baseline) associated with an extension of Orange Line service from Vienna to Centreville (a distance of approximately 10.5 miles) was approximately 18,000 riders per day. (See Table 11X in Screen 2A Travel Modeling Results).
2. The projected additional incremental change in total daily Metrorail ridership (relative to the Enhanced Baseline) associated with an additional extension of Orange Line service beyond Centreville to Gainesville (an additional distance of approximately 9.0 miles) was approximately 4,000 riders per day.
3. The following table compares these results to existing end-of-line route terminus segments of the Metrorail system. The proposed Centreville extension ridership per route mile is somewhat lower, but of a similar order of magnitude to currently observed end-of-line conditions. Conversely, the proposed Gainesville extension ridership per route mile is dramatically lower (by a factor of over 5 times) in comparison to the lowest currently observed end-of-line conditions.

Therefore, further consideration of a Metrorail extension beyond the Centreville area does not appear to be warranted.

COMPARISON OF END-OF-LINE METRORAIL RIDERSHIP

End of Line Station	Interim Station	Segment Length (Miles)	Riders on Segment	End of Line Riders	Year of Analysis	Riders/Route Mile
Gainesville	Vienna	19.46	41,500	4,900	2020	2,130
Centreville	Vienna	10.52	35,500	14,600	2020	3,380
Shady Grove	White Flint	7.19	44,600	19,100	1990	6,207
Vienna	East Falls	9.40	47,300	17,900	1990	5,031
New Carrollton	Deanwood	5.33	32,800	18,100	1990	6,154
Addison Road	Benning	5.00	23,600	10,500	1990	4,716

Source: KPMG and BRW, Inc

CONCLUSIONS RELATIVE TO BUS, LRT, AND VRE SERVICES

From a review of Table 8-1 in the Screen 2A Travel Modeling Results, several basic conclusions can be drawn relative to the performance of the bus, LRT, and VRE elements of the various corridor alternatives. These are as follows:

1. The more that bus routes become focused on rail transit stations, the lower the number of all-bus riders that are observed.
2. Strategy #12 - "Super Bus" is projected to make only a relatively minor difference in total transit ridership (an increase of 5,600 passengers per day or about 9 percent) and in total all-bus ridership (4,400 passengers per day or about 13 percent) in comparison to the performance of the Enhanced Baseline option. This is in spite of the fact that "Super Bus" represents an increase in the number of peak hour buses from 87 to 137 (58 percent), an increase in bus-hours from 610 to 950 (56 percent), and an increase in bus-miles from 18,100 to 30,100 (66 percent).
3. Projected ridership on the VRE Manassas line exhibits relatively little change from the Enhanced Baseline level of 2,200 passengers per day with supportive actions such as expanded feeder bus service (Strategy #12 - Super Bus) or a service extension to Gainesville (Strategy #15), with the latter only resulting in an increase of 400 passengers per day or about 18 percent. However, VRE ridership is negatively impacted to a much more substantial degree (a drop of as much as 700 passengers per day or about a 32 percent decrease) by the provision of competing radial fixed guideway transit services (either LRT or Metrorail).

At the same time, although VRE service improvements by themselves would not eliminate the need to consider other corridor improvements in the SOV, HOV, LRT, or Metrorail submodes, the 1,500 to 2,600 passenger trips projected to use the VRE Manassas Line in the year 2020 represent a diversion of a similar number of automobiles from what can be expected to be a very congested highway system. Moreover, VRE service (whether extended to Gainesville or not) may represent a reasonably cost effective means of transporting persons from the western portions of the I-66 corridor to destinations in Downtown Washington that should be evaluated in subsequent screens.

4. Total corridor-related transit ridership is highest for those alternatives which incorporate LRT system elements, and lowest for those which include only bus system improvements.

The implications of these conclusions are as follows:

1. *The Enhanced Baseline bus network probably represents the maximum reasonable bus network for the study area.*

2. Strategy #12 - Super Bus should be dropped from further consideration as an independent alternative due to its relatively minimal effects upon increased ridership in comparison to the Enhanced Baseline. However, *selected elements from the "Super Bus" alternative will be investigated for possible incorporation into the Enhanced Baseline bus network, HOV strategies and the various rail alternative feeder bus networks in subsequent alternatives refinement tasks.*
3. The generally minimum effects on corridor transit ridership resulting from changes to assumed VRE service levels would appear to indicate that Strategy #15 - VRE can be dropped from further consideration as an independent alternative. However, VRE may prove to be a cost-effective means to transport persons from the western portion of the study corridor to downtown Washington. Therefore, *it is recommended that the potential VRE service extension to Gainesville be retained as an element in all future alternatives which do not include either a Metrorail extension to the Centreville area or an LRT line to Manassas.*
4. *The high numbers of transit riders projected to utilize LRT services warrant further consideration of this transit submode.* Both the three line LRT service option and the single north-south service along Route 28 in conjunction with a possible Metrorail extension to the Centreville area appear to be worthy of additional analysis.

RECOMMENDED STRATEGIES FOR FURTHER ANALYSIS

On the basis of the preceding analysis, the following findings are presented. These findings only relate to travel demand and do not address the other two general areas of evaluation: environmental/land acquisition impacts and financial performance.

- The projected HOV 2+ travel demand associated with any of the 15 Screen 2A strategies is of such a magnitude as to require the provision of two, barrier separated lanes from the Capital Beltway west to the vicinity of Route 234 and should therefore be a "given" in all of the strategies which are to be carried forward.
- The projected SOV demand associated with all of the 15 Screen 2A strategies exceeds the travel carrying capacity of the existing roadway system. SOV capacity improvements from Route 50 east and possibly Route 28 east are warranted from a travel demand standpoint in all of the strategies to be carried forward in Screen 2B. Screen 2B needs to analyze the right-of-way, socio-economic impacts, and financial implications of this action; and needs to analyze the lane balance requirements at the I-66/I-495 interchange.
- Selected highway improvements, bus system improvements comparable to the Enhanced Baseline, and the extension of VRE service in the study area should be considered further.
- Strategy 12: Super Bus should be dropped as an independent option.
- Strategy 15: Extend VRE service should be dropped as an independent option.
- Forecast rail ridership justifies further consideration of a Metrorail extension to Centreville, but not beyond Centreville within the planning horizon of this study.
- The high number of transit riders projected to utilize LRT services warrant further consideration of this transit mode for both the three line LRT service option and the single north-south service option along Route 28 with an extension of Metrorail service to Centreville.

The implications of these findings are that there are a reduced number of independent, multi-modal strategies which need to be subjected to more in-depth analysis and evaluation. Moreover, all of these strategies would likely include several common elements, in particular, the assumption of the need for two barrier separated HOV lanes from the area of the Route 28 Bypass east to the Capital Beltway, selected bus system improvements comparable to those included in the Enhanced Baseline, and selected corridor wide general use highway improvements drawn from the original County Highway Plan strategy. With these "given" elements for all future corridor wide strategies, the remaining major variables would be as follows:

1. Assume an I-66 mainline SOV lane upgrade/lane balance level of improvement from some point west of the U.S. Route 50 interchange east to the Capital Beltway interchange or assume a major reconstruction of the I-66 mainline over these same general limits to an express/local configuration similar to that which presently exists along portions of I-270 in Montgomery County, Maryland north of the Capital Beltway.
2. Extend Metrorail service from the current Vienna terminus station to the Centreville area (but not beyond).
3. Construct three new LRT lines, two emanating from the Vienna Metrorail station and following the Route 29 and Route 50 corridors to Route 28 and the third running north-south along Route 28 from the Manassas Area to the area of Dulles Airport or
4. Construct a single new, north-south oriented LRT line along the Route 28 corridor between the Manassas area and the Dulles Airport area, but only in conjunction with an extension of Metrorail service from Vienna to Centreville.

Mixing and matching these various common and unique elements with one another, and seeking to define as separate and distinct a group of multi-modal strategies as possible, has resulted in the descriptions illustrated on the table on the following page.

This suggested listing of strategies all share the common elements of two barrier separated HOV lanes, bus system enhancements, and selected highway improvements throughout the study area. Strategies 2B-1 and 2B-2 would test the relative effectiveness (and costs and impacts) associated with I-66 mainline SOV lane upgrades and interchange lane balance improvements as opposed to the creation of a more expansive express/local lane use concept, and would also assume a VRE extension to Gainesville. Strategies 2B-3, 2B-4, and 2B-5, respectively, would test the effects of three differing levels of fixed guideway transit investment, namely, Metrorail to Centreville, three new LRT lines, or a combination of Metrorail to Centreville and a single north-south LRT line along Route 28.

RECOMMENDED STRATEGIES FOR SCREEN 2B ANALYSIS

Element	Recommended Strategies				
	2B-1	2B-2	2B-3	2B-4	2B-5
Selected Study Area Wide Highway Improvements	X	X	X	X	X
Bus System Enhancements	X	X	X	X	X
Two Barrier Separated HOV Lanes	X	X	X	X	X
I-66 Mainline SOV Lane Upgrades / Lane Balance	X		X	X	X
I-66 Major Rebuild (Express/Local Concept)		X			
Metrorail Extension to Centreville			X		X
Three LRT Lines Along Routes 28, 29, and 50				X	
One North-South LRT Line Along Route 28					X
VRE Extension to Gainesville	X	X			

Note: Baseline Strategy and Enhanced Baseline Strategy will also be carried into Screen 2B.

The resulting disposition of the originally defined Screen 2A strategies is thus as follows:

Strategy	Disposition
Enhanced Baseline	Retained for further analysis
1 - SOV+HOV	Retained for further analysis (Strategies 2B-1 and 2B-2)
2 - SOV+LRT	Drop from consideration as separate strategy
3 - SOV+Metrorail/Gainesville	Drop from consideration as separate strategy
4 - HOV+LRT	Drop from consideration as separate strategy
5 - HOV+Metrorail/Centreville	Drop from consideration as separate strategy
6 - LRT+Metrorail/Centreville	Drop from consideration as separate strategy
7 - SOV+HOV+LRT	Retained for further analysis (Strategy 2B-4)
8 - SOV+HOV+Metro/Centreville	Retained for further analysis (Strategy 2B-3)
9 - SOV+LRT+Metro/Centreville	Drop from consideration as separate strategy
10 - HOV+LRT+Metro/Centreville	Retained for further analysis (Strategy 2B-5)
11 - Express / Local	Incorporated into Strategy 2B-2
12 - Super Bus	Elements incorporated into all Screen 2B strategies
13 - County Highway	Elements incorporated into all Screen 2B strategies
14 - Metrorail to Gainesville	Drop from consideration as separate strategy
15 - VRE Extension to Gainesville	Incorporated into strategies 2B-1 and 2B-2



MEMORANDUM

DATE: December 10, 1997

TO: I-66 Technical Advisory Committee

FROM: Rick Nau

RE: Screen 2A Travel Demand Modeling Results

Revised Screen 2A travel demand modeling results for the I-66 Corridor MIS are attached. The results tables have been revised from those discussed at the November 24 TAC meeting. Specifically, the tables reflect the following revisions:

1. The first table is labeled "Characteristics of Alternatives." This table was prepared to document the approximate scale of each alternative strategy in terms of additional roadway, additional rail service and additional bus service associated with each strategy. These characteristics are indirect measures of costs associated with each strategy.
2. The second table entitled Summary of Key Attributes has been revised to include three columns to show the minimum and maximum values and greatest percent difference (either positive or negative) from the enhanced baseline. In addition, the strategy with the maximum difference (either positive or negative) relative to the Enhanced Baseline has been highlighted.
3. A new row showing "PM Peak Period Directional Lane Miles with Volume to Capacity Ratio = 1.0 or Greater" has been added to both the Summary of Key Attributes and the color Summary Evaluation tables.
4. Previous travel demand model runs for strategy #7 did not include additional lanes on I-66 which should have been included as part of this strategy definition. Therefore, strategy #7 was rerun and all of the tables have been updated to include the revised strategy #7 results.



The packet is organized as follows:

<u>Page</u>	<u>Content</u>
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2	Summary of key attributes
3	Summary evaluation of key attributes
4	Table 1 - Directional lane miles by LOS category
5-9	Table 2 - 2020 Average Daily Traffic by Screenline
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33	Table 10 - Person Trip Throughput at N-S Screenlines
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38	Table 12-2 - Rail Station Group Summary - Total Trips
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40	Table 5X - Daily Person Trips by Mode in Study Area
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43	Table 10X - Daily Transit Trips by Submode in Study Area
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45	Table 11X - Boarding Summary for Rail Stations
46	Table 11WX - HBW Boarding Summary for Rail Stations
47	Table 12 - Ridership Summary for Proposed Rail Lines
48	Table 12W - HBW Ridership Summary for Proposed Rail Lines

Characteristics of Alternatives

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ SOV+HOV+ Metro/C	SOV+HOV+ LRT	SOV+HOV+ Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express Local	Super Bus	County Highway	Metro/G
Lane Miles in Corridor	2115	2060	2081	2057	2057	2043	2097	2116	2081	2057	2142	2044	2269	2043
Change from CLRP	84	29	50	26	26	12	66	85	50	26	111	13	238	12
% Change from CLRP	4.1%	1.4%	2.5%	1.3%	1.3%	0.6%	3.2%	4.2%	2.5%	1.3%	5.5%	0.6%	11.7%	0.6%
Miles of Barrier HOV	25.9	-	-	25.9	25.9	-	25.9	25.9	-	25.9	-	-	-	-
Additional Route Miles:														
Metro/G	-	-	20.6	-	10.5	10.5	-	10.5	10.5	10.5	-	-	-	20.6
LRT	-	39.7	-	39.7	-	20.1	39.7	-	20.1	20.1	-	-	-	-
Additional Stations:														
Metro/G	-	-	6	-	4	4	-	4	4	4	-	-	-	6
LRT	-	28	-	28	-	14	28	-	14	14	-	-	-	-
Additional Peak Trains:														
Metro/G	-	-	9	-	5	5	-	5	5	5	-	-	-	9
LRT	-	39	-	39	-	14	39	-	14	14	-	-	-	-
Add. Daily Train-Hours														
Metro/G	-	-	117	-	66	66	-	66	66	66	-	-	-	117
LRT	-	493	-	493	-	175	493	-	175	175	-	-	-	-
Add. Daily Train-Miles:														
Metro/G	-	-	5,110	-	2,600	2,600	-	2,600	2,600	2,600	-	-	-	5,110
LRT	-	13,050	-	13,050	-	4,970	13,050	-	4,970	4,970	-	-	-	-
Peak Buses	55	81	78	79	79	79	77	77	76	77	82	137	84	81
Change from Enhanced	-	(6)	(9)	(8)	(8)	(8)	(10)	(10)	(10)	(11)	(5)	50	(3)	(6)
% Change from Enhanced	-	-6.9%	-10.3%	-9.2%	-9.2%	-9.2%	-11.5%	-11.5%	-12.6%	-11.5%	-5.7%	57.5%	-3.4%	-6.9%
Bus Hours	400	560	560	570	560	570	560	550	540	560	590	650	600	560
Change from Enhanced	-	(30)	(50)	(40)	(30)	(40)	(50)	(60)	(70)	(50)	(20)	340	(10)	(30)
% Change from Enhanced	-	-4.9%	-8.2%	-6.6%	-4.9%	-6.6%	-8.2%	-9.8%	-11.5%	-8.2%	-3.3%	55.7%	-1.6%	-4.9%
Bus Miles	11,500	17,800	17,100	17,700	17,300	16,500	17,700	17,300	16,500	16,500	18,100	30,100	18,100	17,100
Change from Enhanced	-	(300)	(1,000)	(400)	(800)	(1,600)	(400)	(800)	(1,600)	(1,600)	0	12,000	0	(1,000)
% Change from Enhanced	-	-1.7%	-5.5%	-2.2%	-4.4%	-8.8%	-2.2%	-4.4%	-8.8%	-8.8%	0.0%	68.3%	0.0%	-5.5%

SCREEN 2A TRAVEL DEMAND EVALUATION OF STRATEGIES SUMMARY OF KEY ATTRIBUTES

EVALUATION CRITERIA	MEASURE OF EFFECTIVENESS	ATTRIBUTE	SOURCE TABLE REFERENCE	CLRP	Enhanced Base	SOV+ HOV	SOV+ LRT	SOV+ MetroG	3	4	HOV+ MetroC	LRT+ MetroC	SOV+HOV+ LRT+ MetroC	SOV+HOV+ LRT+ MetroC	SOV+LRT+ MetroC	HOV+LRT+ MetroC	Express/ Local	Super Bus	County Highway	13	14	15	MINIMUM VALUE	MAXIMUM VALUE	% DIFFERENCE FROM ENHANCED BASE	
GOAL #1 - ACCOMMODATE EXISTING AND FUTURE MOBILITY DEMAND																										
Roadway Traffic Operations	Level of Service on Primary Study Area Roadways	PM Peak Period Directional Lane Miles with Volume to Capacity Ratio = 1.20 or Greater	Table 1	167.9	165.4	135.0	161.7	165.6	155.1	158.9	178.8	132.2	133.8	168.0	156.9	158.4	168.1	148.5	170.0	173.7	132.2	178.8	20%			
		PM Peak Period Directional Lane Miles with Volume to Capacity Ratio = 1.00 or Greater	Table 1	486.6	470.7	470.4	496.2	478.2	460.8	476.8	495.6	480.5	458.5	475.3	470.9	471.2	484.6	388.0	492.6	480.4	388	496.2	18%			
		PM Peak Hour Volume to Capacity Ratio at North-South Screenline West of Fairfax City	Table 4 Summary Screenline 2 (total)	1.19	1.18	1.04	1.14	1.06	1.14	1.15	1.18	1.12	1.03	1.05	1.13	1.16	1.20	1.17	1.16	1.20	1.03	1.20	13%			
		PM Peak Hour Volume to Capacity Ratio at East-West Screenline 10 (total)	Table 4 Summary Screenline 10 (total)	1.12	1.11	1.04	1.13	1.05	1.05	1.06	1.07	1.07	1.04	1.06	1.06	1.11	1.06	0.97	1.07	1.10	0.97	1.13	13%			
		Vehicle Miles of Travel on the Primary Study Area Roadways	Table 5-1	18,833,000	18,796,000	19,710,000	19,269,000	19,761,000	18,994,000	18,977,000	19,052,000	19,317,000	18,628,000	18,667,000	18,945,000	20,081,000	19,036,000	19,292,000	19,125,000	18,835,000	18,796,000	20,081,000	7%			
		Vehicle Hours of Travel on the Primary Study Area Roadways	Table 6-1	197,800	196,100	197,800	199,300	202,200	202,000	202,700	201,400	195,800	197,100	201,000	199,400	205,200	202,900	189,800	202,700	199,200	199,200	189,800	205,200	5%		
		Vehicle Hours of Delay on the Primary Study Area Roadways	Table 5-1	118,400	117,300	112,800	117,900	119,000	120,200	120,700	124,100	111,700	112,100	117,800	117,800	119,500	125,900	103,900	123,600	120,200	103,900	125,900	11%			
		PM Peak Period Effective Speed	Table 6-1	26.3	26.4	27.8	26.6	27.0	26.2	26.2	26.1	27.5	27.8	27.0	26.5	27.2	25.9	28.2	26.0	26.1	25.9	28.2	7%			
		Vehicle Occupancy	Table 7-1 Screenline 2	1.166	1.166	1.183	1.157	1.159	1.197	1.204	1.159	1.189	1.183	1.160	1.186	1.151	1.169	1.159	1.158	1.166	1.151	1.204	3%			
		Transit System Ridership	Table 8-1	48,800	59,500	59,600	76,400	71,300	77,700	68,000	75,500	78,000	67,700	75,200	76,000	59,300	59,300	65,100	89,900	71,300	60,000	48,800	78,000	31%		
Mobility	Transit Passenger Forecasts by Mode	Table 9-2	4.8%	5.6%	5.6%	7.8%	7.6%	8.1%	7.1%	7.1%	8.1%	8.0%	7.1%	8.0%	8.0%	5.6%	6.0%	5.6%	7.7%	5.6%	4.8%	8.1%	45%			
	Primary Study Area Mode Split	Table 9-2	32.6%	34.5%	34.4%	42.5%	47.0%	42.0%	43.6%	46.3%	41.9%	43.9%	45.2%	44.2%	35.0%	35.0%	35.3%	35.0%	47.6%	35.1%	32.6%	47.8%	38%			
	Home Based Work Corridor Related Transit Trips	Table 9-2	958,800	970,100	969,800	987,300	880,200	988,800	976,200	985,500	989,200	976,800	985,800	985,300	968,400	968,400	974,700	971,100	980,000	970,500	958,800	989,200	2%			
	New Transit Riders	Table 6-1	565,300	570,300	641,600	617,700	659,600	602,100	598,000	598,000	626,200	655,100	655,900	597,700	622,300	622,300	577,100	580,200	589,500	571,600	565,300	658,600	15%			
	Paratransit Throughput	Table 10 Screenline 2	675	675	591	639	610	636	641	654	611	591	610	610	636	587	680	843	664	675	587	680	13%			
		Door-to-Door Transit Time (Including Repositioning Origin, Destination, and Commute)	Table 11-A	NA	781	708	775	705	755	709	691	755	706	659	659	771	756	774	710	791	639	791	19%			
		Composite HOV Travel Time	Table 11-C	522	522	424	525	488	436	432	432	424	488	436	436	489	514	510	532	522	424	532	19%			
		Revenue Commute Accessibility	Table 8-2	3,100	3,200	3,200	4,200	3,800	4,200	3,800	4,100	4,200	3,800	4,100	4,100	4,200	3,100	3,300	3,100	3,800	3,200	3,100	4,200	31%		
	GOAL #2 - IMPROVE REGIONAL ACCESS TO I-66 CORRIDOR ACTIVITY CENTERS AND IMPROVE ACCESS FROM THE I-66 CORRIDOR TO THE REGION																									
	Accessibility	Door-to-Door Transit Time (Including Repositioning Origin, Destination, and Commute)	Table 11-B	675	675	591	639	610	636	641	654	611	591	610	610	636	587	680	843	664	675	587	680	13%		
Composite Transit Travel Time		Table 11-A	NA	781	708	775	705	755	709	691	755	706	659	659	771	756	774	710	791	639	791	19%				
Composite HOV Travel Time		Table 11-C	522	522	424	525	488	436	432	432	424	488	436	436	489	514	510	532	522	424	532	19%				
Revenue Commute Accessibility		Table 8-2	3,100	3,200	3,200	4,200	3,800	4,200	3,800	4,100	4,200	3,800	4,100	4,100	4,200	3,100	3,300	3,100	3,800	3,200	3,100	4,200	31%			
		Door-to-Door Transit Time (Including Repositioning Origin, Destination, and Commute)	Table 11-B	675	675	591	639	610	636	641	654	611	591	610	610	636	587	680	843	664	675	587	680	13%		
		Composite Transit Travel Time	Table 11-A	NA	781	708	775	705	755	709	691	755	706	659	659	771	756	774	710	791	639	791	19%			
		Composite HOV Travel Time	Table 11-C	522	522	424	525	488	436	432	432	424	488	436	436	489	514	510	532	522	424	532	19%			
		Revenue Commute Accessibility	Table 8-2	3,100	3,200	3,200	4,200	3,800	4,200	3,800	4,100	4,200	3,800	4,100	4,100	4,200	3,100	3,300	3,100	3,800	3,200	3,100	4,200	31%		
		Door-to-Door Transit Time (Including Repositioning Origin, Destination, and Commute)	Table 11-B	675	675	591	639	610	636	641	654	611	591	610	610	636	587	680	843	664	675	587	680	13%		
		Composite Transit Travel Time	Table 11-A	NA	781	708	775	705	755	709	691	755	706	659	659	771	756	774	710	791	639	791	19%			

NOTE: Shaded box indicates value with the maximum difference from the Enhanced Base Scenario.
SOURCE: BPR, Inc. and SPAG

SCREEN 2A TRAVEL DEMAND EVALUATION OF STRATEGIES
SUMMARY EVALUATION OF KEY ATTRIBUTES

EVALUATION CRITERIA	MEASURE OF EFFECTIVENESS	ATTRIBUTE	SOURCE TABLE REFERENCE	CLRP	Enhanced Base	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SOV+HOV+ LRT	8 SOV+HOV+ Metro/C	9 SOV+LRT+ Metro/C	10 HOV+LRT+ Metro/C	11 Express Local	12 Super Bus	13 County Highway	14 Metro/G	15 VRE
GOAL #1 - ACCOMMODATE EXISTING AND FUTURE MOBILITY DEMAND																				
Roadway Traffic Operations	Level of Service on Primary Study Area Roadways	PM Peak Period Directional Lane Miles with Volume to Capacity Ratio = 1.20 or Greater	Table 1	●	○	■	■	○	■	■	○	■	■	○	■	■	○	■	○	○
		PM Peak Period Directional Lane Miles with Volume to Capacity Ratio = 1.00 or Greater	Table 1	●	○	○	○	○	■	○	○	○	■	○	○	○	○	■	○	○
		PM Peak Hour Volume to Capacity Ratio at North-South Screenline West of Fairfax City	Table 4 Summary Screenline 2 (total)	○	○	■	■	■	■	■	○	■	■	■	■	■	○	○	○	○
		PM Peak Hour Volume to Capacity Ratio at East-West Screenline North of I-66	Table 4 Summary Screenline 10 (total)	○	○	■	○	■	■	■	■	■	■	■	■	○	■	■	■	○
	Vehicle Miles of Travel on the Primary Study Area Roadways	2020 Average Daily Vehicle Miles of Travel	Table 5-1	○	○	●	○	●	○	○	○	○	○	○	○	●	○	○	○	○
	Vehicle Hours of Travel on the Primary Study Area Roadways	2020 PM Peak Period Vehicle Hours of Travel	Table 6-1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Vehicle Hours of Delay on the Primary Study Area Roadways	2020 Average Daily Vehicle Hours of Delay	Table 5-1	○	○	■	○	○	○	○	○	■	■	○	○	○	○	○	○	○
		PM Peak Period Effective Speed	Table 6-1	○	○	■	○	■	○	○	○	■	■	■	○	■	○	■	○	○
	Vehicle Occupancy	Home Based Work Trip Vehicle Occupancy at North-South Screenline	Table 7-1 Screenline 2	○	○	○	○	○	■	■	○	■	○	○	■	○	○	○	○	○
Transit System Ridership	Transit Patronage Forecasts by Mode	Total Corridor Related Transit Trips	Table 8-1	●	○	○	■	■	■	■	■	■	■	■	■	○	■	○	■	○
	Primary Study Area Mode Split	Home Based Work Corridor Related Transit Trips	Table 8-2	○	○	○	■	■	■	■	■	■	■	■	■	○	■	○	■	○
		Home Based Work Corridor to Core Transit Trips	Table 8-2	○	○	○	■	■	■	■	■	■	■	■	■	○	■	○	■	■
	New Transit Riders	Total Regional Transit Riders	Table 8-1	○	○	○	■	○	■	○	■	■	○	■	■	○	○	○	○	○
Mobility	Person Throughput	Daily Person Trips Crossing North-South Screenline West of Fairfax City	Table 10 Screenline 2	○	○	■	■	■	■	■	■	■	■	■	■	○	■	■	■	○
GOAL #2 - IMPROVE REGIONAL ACCESS TO I-66 CORRIDOR ACTIVITY CENTERS AND IMPROVE ACCESS FROM THE I-66 CORRIDOR TO THE REGION																				
Accessibility	Door-to-Door Transit and Vehicle Travel Times Between Representative Origin-Destination Pairs Including Reverse Commutes	Composite General Purpose Travel Times	Table 11-B	○	○	■	■	■	■	■	■	■	■	■	■	○	■	■	■	○
		Composite Transit Travel Times	Table 11-A	NA	○	■	■	■	■	■	■	■	■	■	■	■	■	■	■	○
		Composite HOV Travel Times	Table 11-C	○	○	■	○	■	■	○	○	■	■	■	■	■	■	■	○	○
Reverse Commute Accessibility	Number of Reverse Commute Transit Trips Served	Home Based Work Reverse Commute Transit Trips	Table 8-2	○	○	○	■	■	■	■	■	■	■	■	■	○	■	○	■	○

LEGEND

■

Very Positive

■

Positive

○

Neutral

○

Negative

●

Very Negative

NOTE: All evaluations are relative to the Enhanced Baseline Strategy.

Table 1
Directional Lane Miles by LOS Category by Area - PM Peak Period

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LOS Category	CLRP	Enhanced Base	VRE	SOV4 HOV	SOV4 LRT	SOV4 Metro/G	HOV4 LRT	HOV4 Metro/C	LRT4 Metro/C	SOV+HOV4 LRT	SOV+HOV4 Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super Bus	County Highway	14 Metro/G
Inner Corridor	71.7	66.9	68.7	84.5	84.0	85.0	73.1	75.6	71.9	82.1	81.7	80.0	74.3	85.8	65.3	85.8	68.9
Under 0.80																	
0.80-0.99	60.0	67.0	62.1	71.0	72.8	74.4	77.8	69.4	63.5	64.5	71.8	76.5	72.9	91.2	62.2	76.9	62.6
1.00-1.19	126.2	120.7	117.7	141.3	130.1	126.6	112.0	112.8	112.1	150.1	144.4	127.3	115.9	134.2	118.2	106.7	124.4
1.20 and over	98.7	100.1	106.2	83.9	88.0	97.9	99.2	104.3	107.2	79.2	82.8	96.0	98.9	87.6	109.0	105.6	98.7
Central Corridor																	
Under 0.80	279.4	275.0	282.6	308.1	270.0	293.4	282.8	271.6	275.3	288.7	308.3	302.2	277.1	306.2	280.9	400.1	269.0
0.80-0.99	156.2	169.2	162.7	184.5	158.3	177.5	180.1	185.1	166.9	177.0	197.5	174.0	178.7	181.3	168.2	170.2	177.5
1.00-1.19	126.1	120.1	118.2	122.6	141.5	121.3	118.3	124.8	132.8	134.5	109.7	115.4	122.5	121.4	132.9	97.3	128.0
1.20 and over	36.0	35.4	36.3	32.2	42.8	37.2	35.8	35.8	41.4	34.1	32.0	37.9	39.0	40.3	38.1	29.2	41.7
West Corridor																	
Under 0.80	368.5	365.9	365.4	382.0	362.7	361.8	372.3	369.4	367.3	382.5	376.1	363.1	364.0	406.0	367.1	531.4	369.8
0.80-0.99	80.6	88.9	83.3	89.8	92.5	86.4	86.2	84.8	82.7	97.1	97.6	90.3	96.9	76.3	90.7	79.2	79.3
1.00-1.19	43.0	41.9	47.4	52.2	41.6	48.9	56.0	59.8	47.5	44.4	50.3	40.9	53.2	39.6	40.7	26.3	49.5
1.20 and over	26.3	21.7	22.4	12.1	24.0	23.8	11.7	12.1	23.4	12.1	12.1	26.5	12.1	21.0	17.7	6.9	22.1
Outer Corridor																	
Under 0.80	472.6	476.0	475.8	464.7	466.3	472.1	472.6	472.1	475.6	473.8	470.6	473.9	477.1	458.6	474.4	479.3	472.1
0.80-0.99	53.5	51.6	50.3	60.4	56.8	51.4	50.9	51.9	44.4	51.3	53.6	46.1	44.9	65.4	50.8	58.0	51.0
1.00-1.19	23.4	22.6	23.4	19.3	21.4	20.9	19.3	20.4	24.4	19.3	20.3	23.7	22.4	19.7	24.9	9.3	20.6
1.20 and over	8.9	8.2	8.9	6.8	6.8	6.8	8.3	6.8	6.8	6.8	6.8	7.5	6.8	7.5	3.3	6.8	7.5
Total Corridor																	
Under 0.80	1192.2	1183.7	1192.4	1239.3	1183.0	1212.2	1200.8	1188.7	1190.0	1227.1	1236.8	1218.2	1192.5	1256.6	1187.7	1496.6	1179.8
0.80-0.99	352.3	376.8	358.3	405.7	380.4	389.7	395.0	391.2	357.5	389.8	420.5	386.9	393.4	414.3	371.8	384.4	370.5
1.00-1.19	318.7	305.3	306.7	335.4	334.5	313.6	305.7	317.9	316.8	348.3	324.7	307.3	314.0	314.8	316.5	239.5	322.6
1.20 and over	167.9	165.4	173.7	135.0	161.7	165.6	155.1	158.9	178.8	132.2	133.8	188.0	156.9	156.4	168.1	148.5	170.0
Total	2031.1	2031.2	2031.1	2115.4	2059.6	2081.1	2056.6	2056.7	2043.1	2097.4	2115.8	2081.4	2056.8	2142.1	2044.1	2269.0	2042.9

02-Dec-97

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Table 2
I-66 2020 Average Daily Traffic by Screenline

02-Dec-97

Screen Line 1 Outside I-495

Location	Enhanced Base	VRE	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHO+ LRT	8 SHO+ Metro/C	9 SILRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Braddock Road	127,555	126,885	124,836	122,642	123,010	126,965	127,240	128,632	123,867	125,317	121,613	128,492	122,700	127,509	127,672	128,176
VA 236	86,596	86,089	84,574	82,443	82,963	85,470	85,707	86,211	83,811	83,921	83,004	85,244	81,288	87,586	85,792	85,799
Gallows Road	64,156	62,960	62,424	59,388	59,799	63,963	63,461	62,485	61,589	62,268	59,866	64,287	53,556	63,470	78,758	63,662
US 50	86,830	87,468	85,130	78,952	82,193	86,217	86,370	87,769	82,388	84,309	80,486	86,910	80,486	86,910	79,514	87,200
US 29	74,886	76,051	76,030	74,204	74,874	75,935	76,071	75,205	74,414	75,237	75,117	74,490	72,050	77,831	82,855	76,853
I-66 EB	74,946	75,304	91,302	102,585	103,953	75,458	75,209	76,337	91,849	92,073	105,721	75,057	33,959	74,394	74,575	75,250
I-66 HOV EB	4,124	3,885	5,599	4,061	3,900	6,300	6,237	3,568	5,370	5,291	3,874	5,793	89,720	3,699	4,275	3,771
I-66 HOV WB	4,866	4,928	7,085	4,907	5,240	7,467	7,508	4,774	6,866	7,072	5,019	7,184	83,223	4,747	4,745	4,908
I-66 WB	74,429	74,967	91,896	100,985	100,988	76,501	76,262	75,300	90,447	90,881	102,036	76,071	39,970	74,802	75,236	75,138
Idylwood Road	22,561	22,516	22,739	22,354	22,542	22,434	22,558	22,889	22,276	22,818	22,579	22,423	21,985	22,848	21,646	22,575
Oak Street	8,423	8,166	8,374	7,953	8,004	8,045	8,165	8,197	7,777	7,868	7,772	8,033	8,910	8,267	7,646	8,158
VA 7	110,065	111,343	110,543	110,395	110,978	111,875	111,047	111,432	111,354	110,036	110,113	110,897	114,665	112,310	114,066	111,814
VA 123	114,030	114,395	114,580	115,054	115,750	114,507	113,843	114,207	114,059	113,424	115,174	113,157	113,697	115,590	114,892	115,919
I-66	158,616	159,083	195,882	212,538	214,081	165,726	165,216	159,979	194,352	195,317	216,650	164,105	246,872	157,642	158,831	159,065
Other	693,841	695,802	690,230	673,385	680,111	695,411	694,462	696,837	681,535	685,218	676,261	690,969	669,247	701,931	712,609	699,956
Total	852,457	854,885	886,112	885,923	894,192	861,137	859,678	856,816	875,887	880,535	892,911	855,074	916,119	859,573	871,440	859,021

Screen Line 2 East-Central

Location	Enhanced Base	VRE	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHO+ LRT	8 SHO+ Metro/C	9 SILRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Lawyers Rd	9,529	9,438	8,454	8,713	8,352	9,115	9,079	9,399	8,592	8,265	8,288	9,052	8,901	9,896	9,088	9,572
Vale Rd	22,670	22,727	20,653	21,150	20,842	22,169	22,288	22,265	21,504	20,208	20,371	22,154	21,305	22,807	22,158	22,559
Oakton Rd	18,182	18,414	15,350	16,301	15,480	17,545	17,311	18,009	16,668	15,104	15,006	17,355	16,545	18,284	17,557	18,368
I-66 WB	77,791	78,220	90,975	97,785	95,729	78,533	78,543	78,584	93,015	90,469	96,219	77,486	29,579	77,821	78,087	78,299
I-66 WB HOV	5,441	5,259	9,804	5,211	5,186	10,202	10,308	5,222	9,908	9,706	4,916	10,181	87,323	5,382	5,409	5,301
I-66 EB HOV	4,904	4,884	8,015	4,667	4,499	8,773	8,956	4,550	8,121	7,754	4,288	8,626	90,661	4,498	4,803	4,975
I-66 EB	76,336	79,794	92,591	102,405	101,201	78,483	77,862	79,739	95,327	93,112	100,885	78,017	29,642	80,161	78,335	79,435
US 50	74,532	74,165	90,912	66,955	84,927	72,451	72,304	74,156	69,758	89,234	84,858	72,320	66,337	75,344	75,223	74,291
Braddock Rd	41,565	41,891	57,218	37,406	57,848	41,155	41,332	41,293	37,385	55,676	56,941	40,654	36,192	41,860	51,472	41,365
Popes Head Rd	77,568	76,818	72,420	73,844	71,671	77,053	76,483	77,233	74,963	72,452	71,395	76,659	69,846	77,812	78,378	77,319
Fairfax Station Rd	11,642	11,771	10,839	11,143	10,988	11,495	11,312	11,857	11,154	11,044	10,723	11,493	10,657	11,920	11,543	12,116
	6,193	6,069	5,695	5,885	5,618	5,800	5,979	5,985	5,917	5,753	5,465	5,862	5,391	6,047	6,040	5,876
I-66	167,472	168,150	201,385	210,068	206,615	175,991	175,689	168,075	206,371	201,041	206,306	174,310	237,205	167,862	166,658	168,010
Other	261,881	262,356	281,541	241,397	275,526	256,783	256,086	250,197	245,941	277,734	273,047	255,549	235,374	263,870	271,437	261,466
Total	428,353	430,185	482,926	451,465	482,141	432,774	431,757	428,272	452,312	478,775	479,353	429,859	472,579	431,732	438,095	429,476

Table 2
I-66 2020 Average Daily Traffic by Screenline

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02-Dec-97

Screen Line 3 Central-West

Location	Enhanced Base	VRE	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 SILRT+ Metro/C	10 HLRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
VA 28 (south)	41,081	40,395	39,606	40,668	41,075	42,084	42,821	40,591	39,514	39,390	40,880	41,974	39,155	40,432	47,368	40,965
VA 28 Bypass	65,500	66,134	69,180	66,533	66,334	62,414	63,351	65,809	68,236	68,513	67,238	62,526	71,137	65,541	71,863	65,311
I-66 EB	54,966	54,835	58,696	55,794	55,649	50,448	50,450	54,924	57,890	58,932	55,294	50,799	17,506	55,189	56,331	55,017
I-66 EB HOV	2,574	2,601	3,556	2,411	2,720	3,813	4,041	2,363	3,422	3,550	2,728	3,770	51,299	2,637	2,275	2,308
I-66 WB HOV	3,492	3,648	3,593	3,608	3,790	5,935	6,004	3,416	5,627	5,843	3,825	5,849	51,141	3,688	3,497	3,683
I-66 WB	54,891	53,789	58,548	54,529	55,330	52,399	51,901	55,171	58,173	58,576	54,931	51,822	17,398	55,893	57,220	55,312
US 29	20,270	20,528	21,152	21,188	21,273	24,467	24,770	21,023	20,385	20,858	22,389	23,704	18,276	19,012	19,647	20,894
Bull Run Post Office Rd	3,804	3,835	4,132	3,678	4,473	4,614	4,614	4,440	4,851	4,126	3,901	4,224	4,110	4,407	16,055	4,926
Braddock Rd	7,633	7,278	7,281	7,596	8,556	7,934	7,611	7,930	7,346	6,985	8,039	7,707	7,029	6,939	2,859	8,388
Pleasant Valley Rd	7,005	6,768	5,040	6,600	6,030	6,347	6,602	6,684	5,970	5,124	6,084	6,389	5,924	6,958	5,593	6,667
US 50	49,580	49,503	57,523	49,878	58,766	49,726	48,987	48,704	49,341	56,031	57,805	49,014	49,818	51,801	60,569	49,932
VA 28 (north)	96,386	95,532	96,466	94,564	95,904	98,955	96,063	97,753	95,192	94,227	94,909	97,793	93,172	97,279	121,507	97,988
I-66	115,923	114,873	126,593	116,342	117,489	112,595	112,396	115,874	125,112	126,901	116,778	112,240	137,284	117,407	119,323	116,330
Other	291,259	289,696	300,380	290,705	304,411	296,538	294,819	292,934	290,835	296,254	301,045	293,330	288,621	292,369	345,461	295,049
Total	407,182	404,569	426,973	407,047	421,900	409,133	407,215	408,808	415,947	423,155	417,823	405,570	425,905	409,776	464,784	411,378

Screen Line 4 West-Outer

Location	Enhanced Base	VRE	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 SILRT+ Metro/C	10 HLRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Gum Springs	25,884	25,786	25,187	25,729	26,352	26,385	26,231	25,500	26,400	24,553	25,305	25,818	25,375	24,929	9,712	26,879
VA 234	10,091	10,092	10,528	10,068	10,764	10,431	10,540	10,094	10,165	10,383	10,638	10,370	10,380	10,468	13,885	10,223
Old Carolina Rd	9,723	9,879	9,812	10,022	9,671	9,684	9,868	9,598	9,534	9,413	9,731	9,681	9,246	9,101	7,599	9,792
I-66 WB	41,170	40,753	41,444	41,549	41,778	40,448	40,671	41,248	41,137	41,473	41,339	40,642	41,918	41,553	38,361	41,384
I-66 EB	40,567	40,618	40,820	41,032	40,934	40,046	39,864	40,585	40,737	40,693	40,864	40,011	41,265	40,693	36,020	40,781
VA 55	13,802	13,888	13,917	13,736	14,243	13,785	13,850	13,901	13,775	13,879	13,822	13,873	14,224	13,722	11,405	14,142
US 29	46,284	46,736	46,148	46,912	46,731	45,398	45,852	46,561	45,806	45,984	46,346	45,683	47,655	45,166	48,500	46,686
Glenkirk Rd	11,689	11,331	11,178	11,400	11,765	10,590	10,287	11,570	11,122	11,086	12,078	10,300	12,485	11,819	9,966	11,443
VA 28	67,057	66,111	66,387	66,557	66,962	66,277	66,228	67,168	66,244	66,717	67,248	66,324	67,493	65,868	66,074	66,646
I-66	81,737	81,371	82,264	82,581	82,712	80,494	80,535	81,843	81,874	82,166	82,203	80,653	83,183	82,246	72,381	82,165
Other	184,540	183,823	182,957	184,424	185,406	182,550	182,856	184,392	183,046	182,015	185,168	182,029	186,858	181,073	167,161	185,811
Total	266,277	265,194	265,221	267,005	269,200	263,044	263,391	266,235	264,920	264,181	267,371	262,682	270,041	263,319	239,542	267,976

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Table 2
I-66 2020 Average Daily Traffic by Screenline

02-Dec-97

Screen Line 5 Outer Corridor - S																
Location	Enhanced Base	VRE	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SIHOV+ LRT	SIHOV+ Metro/C	SLRT+ Metro/C	HLRT+ Metro/C	Expr/ Local	Super Bus	County Highway	Metro/G
Crest Hill Rd	1,136	1,227	1,298	1,240	1,306	1,129	1,245	1,383	1,141	1,312	1,235	1,286	1,407	1,154	1,181	1,269
US 17 S	28,194	28,023	28,031	27,440	28,531	28,306	27,950	28,563	28,106	28,027	28,073	28,281	28,191	27,933	23,454	28,565
VA 245	18,568	18,517	18,606	18,699	18,644	18,295	18,340	18,690	18,457	18,383	18,576	18,427	18,648	18,543	18,726	18,654
US 15	20,347	20,095	20,015	20,304	20,261	19,893	19,815	20,511	20,037	20,021	20,143	19,891	20,338	0	0	20,401
Total	68,245	68,015	67,950	67,693	68,742	67,623	67,350	69,147	67,741	67,743	68,027	67,885	68,784	47,630	43,361	68,888
Screen Line 6 West Corridor - S																
Location	Enhanced Base	VRE	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SIHOV+ LRT	SIHOV+ Metro/C	SLRT+ Metro/C	HLRT+ Metro/C	Expr/ Local	Super Bus	County Highway	Metro/G
Old Carolina Rd	9,723	9,879	9,612	10,022	9,671	9,684	9,868	9,598	9,534	9,413	9,731	9,661	9,246	9,101	9,366	9,792
Catharlin Road	3,923	3,962	3,706	3,975	4,042	3,807	3,824	4,001	3,661	3,695	3,960	3,905	3,800	3,777	851	4,008
US 28 HOV SB	0	0	976	0	0	1,131	1,094	0	1,120	1,174	0	1,113	0	0	0	0
US 29	78,948	78,696	79,385	79,095	79,970	77,193	77,074	78,842	78,918	79,319	79,433	76,631	85,647	78,161	79,785	79,993
US 29 HOV NB	0	0	829	0	0	912	851	0	816	817	0	920	0	0	0	0
VA 234 Bypass	52,854	52,549	56,084	52,596	53,892	52,793	53,097	52,336	55,961	55,940	53,603	52,160	54,851	52,737	65,497	53,959
VA 234	69,348	69,226	70,060	69,384	70,915	68,887	68,776	69,203	70,133	69,951	69,376	68,553	72,853	69,569	63,555	70,403
Total	214,796	214,542	220,652	215,072	218,490	214,407	214,584	213,980	220,143	220,309	216,103	212,943	226,397	213,345	219,054	218,155
Screen Line 7 Central Corridor - S																
Location	Enhanced Base	VRE	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SIHOV+ LRT	SIHOV+ Metro/C	SLRT+ Metro/C	HLRT+ Metro/C	Expr/ Local	Super Bus	County Highway	Metro/G
VA 28 Bypass	65,500	65,857	69,180	66,533	68,334	62,414	63,351	65,746	68,236	69,513	67,187	62,428	71,137	65,541	71,863	65,311
Compton Road	3,731	3,597	1,682	3,745	1,917	2,029	2,226	2,042	1,933	1,787	1,810	2,218	3,548	2,418	1,080	2,096
Stone/Braddock	0	0	17,832	0	19,483	21,827	23,907	23,568	21,233	19,889	20,132	23,903	0	17,866	15,833	23,708
US 29	41,850	41,375	43,265	41,305	47,126	35,907	36,508	37,885	35,354	42,986	47,114	36,283	40,236	35,342	42,538	37,712
VA 28	88,148	87,108	91,006	87,332	89,115	83,464	83,291	81,427	81,902	89,738	88,544	82,656	87,916	83,672	109,039	81,965
Stirlingfellow Road	23,979	23,849	20,328	23,740	20,585	23,948	24,636	23,555	23,760	20,413	20,604	24,674	23,688	23,151	22,212	23,798
Fairfax County Parkway	108,661	108,669	100,459	107,874	102,894	105,681	106,484	108,129	106,315	100,666	102,710	106,682	105,893	108,313	100,537	108,237
West Ox Road	33,121	32,578	31,912	32,844	32,819	33,301	33,369	32,197	32,420	31,844	32,762	33,465	32,134	32,466	27,925	32,853
Monument Drive	13,354	13,161	9,501	13,183	10,032	13,879	14,103	13,616	12,927	9,759	9,739	13,867	12,666	13,821	13,444	13,365
US 50	73,017	72,414	92,929	65,050	84,672	68,256	67,612	72,144	67,064	90,953	85,394	68,050	67,122	73,262	72,697	72,549
Total	451,361	448,608	478,094	441,608	476,977	450,708	455,487	460,309	451,144	477,548	476,018	454,226	444,342	455,852	477,168	461,594

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Table 2
I-66 2020 Average Daily Traffic by Screenline

02-Dec-97

Screen Line 8 East Corridor - S

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SIHOV+ LRT	8 SIHOV+ Metro/C	9 SI/LRT+ Metro/C	10 HI/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Waples Mill Road	24,546	24,325	24,604	24,003	25,117	24,493	24,492	24,338	24,377	24,740	23,809	24,251	24,450	24,915	24,242	28,282	24,647
Jermantown	27,274	27,290	27,677	26,018	26,034	25,936	26,922	27,273	27,460	25,937	25,155	26,301	26,931	25,947	27,131	26,508	27,331
VA 123	61,013	59,895	62,258	57,565	63,592	62,187	60,114	61,634	60,830	65,302	57,926	64,528	63,953	63,114	60,138	60,804	63,027
Blake Lane	52,543	52,541	52,602	51,862	52,270	51,141	52,437	51,920	52,025	52,770	50,829	50,613	52,052	49,658	52,747	52,136	52,547
Nutley Street	59,848	59,601	59,850	60,209	63,255	62,450	59,940	60,234	59,435	61,471	59,878	62,151	59,863	60,798	61,074	58,528	60,352
Cedar Lane	10,111	10,375	10,382	10,529	10,648	10,530	10,272	10,318	10,188	10,495	10,412	10,536	10,251	10,091	10,358	9,777	10,302
Gallows Road	62,141	62,212	62,173	63,970	63,436	63,722	62,395	62,188	62,026	63,041	62,825	63,679	61,682	56,346	63,626	74,136	62,636
I-495 SB	97,783	94,806	96,680	96,090	97,020	94,264	97,543	96,201	97,286	97,017	96,863	95,133	97,556	98,173	95,457	94,334	96,291
I-495 HOV SB	9,128	9,159	9,135	9,700	9,732	9,824	9,282	9,190	9,012	9,840	9,559	9,631	9,178	9,355	9,355	9,003	9,294
I-495 HOV NB	8,219	8,219	8,256	8,801	8,658	8,685	8,346	8,380	8,051	8,988	8,636	8,684	8,322	101,632	8,394	7,883	8,108
I-495 NB	96,326	96,154	95,884	94,705	95,336	93,390	96,941	96,356	96,623	97,080	94,741	93,022	96,900	26,729	95,683	94,430	95,622
I-495	209,948	208,338	209,948	209,296	210,746	206,163	212,112	210,127	210,972	212,925	209,799	206,470	211,954	258,322	208,889	205,650	209,315
Other	299,476	296,239	299,546	294,156	304,352	300,459	296,572	297,905	296,341	303,756	290,634	302,059	299,182	290,869	299,516	309,971	300,842
Total	509,494	504,577	509,494	503,452	515,098	506,622	508,684	508,032	507,313	516,681	500,433	508,529	511,136	547,191	508,405	515,621	510,157

Screen Line 9 East Corridor - N

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SIHOV+ LRT	8 SIHOV+ Metro/C	9 SI/LRT+ Metro/C	10 HI/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
I-495 NB	106,873	107,278	107,307	107,933	110,605	109,666	107,576	107,990	108,264	109,364	108,133	110,391	107,313	38,693	107,441	103,308	107,506
I-495 HOV NB	7,426	7,501	7,515	7,703	7,669	7,881	7,626	7,641	7,307	7,776	7,577	7,712	7,574	105,632	7,629	7,009	7,382
I-495 HOV SB	7,420	7,436	7,478	7,647	7,764	8,036	7,489	7,415	7,325	7,625	7,424	7,714	7,426	103,228	7,697	7,130	7,512
I-495 SB	109,943	108,817	110,062	112,021	112,799	111,448	111,058	110,777	110,073	110,979	111,391	112,338	111,464	41,489	109,154	106,514	110,362
Gallows Road	62,141	62,212	62,173	63,970	63,436	63,722	62,395	62,188	62,026	63,041	62,825	63,679	61,682	56,346	63,626	74,136	62,636
Cedar Lane	9,438	9,720	9,794	9,818	9,839	9,811	9,646	9,644	9,528	9,715	9,804	9,753	9,584	9,277	9,626	8,990	9,686
Nutley Street	57,810	57,304	57,591	61,983	62,647	63,354	57,885	57,749	57,456	62,351	62,306	63,027	57,995	60,689	58,083	54,030	58,409
Blake Lane	52,543	52,541	52,602	51,862	52,270	51,141	52,437	51,920	52,025	52,770	50,829	50,613	52,052	49,658	52,747	52,136	52,547
VA 123	46,272	45,762	45,266	42,452	41,239	41,122	44,812	45,119	46,067	42,407	43,620	40,819	46,025	42,021	45,673	53,446	46,329
Jermantown Road	27,274	27,290	27,677	26,018	26,034	25,936	26,922	27,273	27,460	25,937	25,155	26,301	26,931	25,947	27,131	26,508	27,331
Waples Mill Road	24,546	24,325	24,604	24,003	25,117	24,493	24,492	24,338	24,377	24,740	23,809	24,251	24,450	24,915	24,242	28,282	24,647
I-495	231,662	231,032	232,362	235,304	238,837	237,031	233,749	233,823	232,969	235,744	234,525	238,155	233,777	289,042	231,921	223,961	232,742
Other	280,024	279,154	279,707	280,106	280,582	279,579	278,589	278,231	278,939	280,961	278,348	278,443	278,729	268,853	281,328	297,528	281,595
Total	511,686	510,186	512,069	515,410	519,419	516,610	512,338	512,054	511,908	516,705	512,873	516,598	512,508	557,895	513,249	521,489	514,327

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Table 2
I-66 2020 Average Daily Traffic by Screenline

02-Dec-97

Screen Line 10 Central Corridor - N													
Location	Enhanced Base	CLRP	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SHOV+ LRT	SHOV+ Metro/C	SLRT+ Metro/C	HLRT+ Metro/C	County Highway
US 50	81,370	80,809	123,093	87,864	123,978	82,043	81,384	80,686	85,331	121,730	123,642	81,477	81,257
Monument	14,861	15,213	11,713	15,180	11,989	17,308	17,249	15,162	16,121	11,959	11,892	17,085	15,141
West Ox Road	41,143	41,548	39,600	40,822	40,148	41,776	42,362	40,756	40,788	39,712	40,137	42,467	35,814
Fairfax County Parkway	102,089	103,296	99,859	104,639	99,510	102,713	102,591	102,122	102,635	99,410	98,639	102,586	101,857
Striggle Road	23,489	23,625	19,956	23,350	20,455	23,444	23,996	23,170	23,483	19,868	20,444	24,180	22,735
VA 28	140,111	140,064	134,418	139,848	134,577	132,891	133,128	135,429	136,837	133,702	132,846	132,897	144,874
US 29	40,585	40,282	33,894	40,552	35,609	33,230	34,528	36,736	35,231	35,885	35,752	33,429	169,355
StoneBraddock	0	0	19,781	0	19,483	24,235	26,227	23,712	23,561	21,718	20,296	26,127	32,758
Compton Road	3,597	3,731	1,682	3,745	1,917	2,029	2,226	2,042	1,933	1,787	1,810	2,218	15,833
Total	447,245	448,568	483,996	456,000	487,666	459,669	463,691	459,815	465,920	485,711	485,458	462,468	463,055
													481,988
Screen Line 11 West Corridor - N													
Location	Enhanced Base	CLRP	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SHOV+ LRT	SHOV+ Metro/C	SLRT+ Metro/C	HLRT+ Metro/C	County Highway
VA 234	32,751	33,291	32,658	33,206	33,169	33,168	33,136	32,453	32,782	32,171	32,599	32,689	33,236
US 29	28,817	28,817	27,436	28,881	28,830	31,745	31,605	28,798	27,484	27,530	29,698	30,980	29,119
Calhoun Road	3,897	3,923	3,706	3,975	4,042	3,807	3,824	4,001	3,661	3,695	3,960	3,905	4,008
Old Carolina Rd	9,879	9,723	9,612	10,022	9,671	9,684	9,868	9,598	9,534	9,413	9,731	9,661	9,792
Total	75,403	75,754	73,412	76,084	75,712	78,404	78,433	74,850	73,461	72,809	75,988	77,235	76,155
Screen Line 12 Outer Corridor - N													
Location	Enhanced Base	CLRP	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SHOV+ LRT	SHOV+ Metro/C	SLRT+ Metro/C	HLRT+ Metro/C	County Highway
US 15	34,423	34,809	33,702	34,761	35,012	34,115	34,130	34,343	33,611	34,034	34,643	34,047	34,644
Antioch Rd	2,557	2,591	2,545	2,599	2,561	2,491	2,465	2,664	2,540	2,594	2,506	2,469	2,602
Hopewell Rd	13,402	13,432	12,991	13,486	13,545	12,976	13,099	13,507	12,923	13,052	13,545	13,219	12,798
Redtown Rd	16,957	17,007	16,624	16,089	17,212	17,085	16,752	17,508	16,843	16,669	16,672	17,082	13,396
US 17 N	15,392	15,428	15,491	15,417	15,457	15,374	15,302	15,372	15,600	15,517	15,418	15,344	17,376
Total	82,517	83,267	81,353	82,352	83,787	82,041	81,738	83,394	81,617	81,866	82,784	82,161	83,449
													71,066

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Screen Line 1 Outside I-495

Table 3
I-66 2020 P.M. Peak Hour/Peak Direction Traffic by Screenline

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SIHOV+ LRT	8 SIHOV+ Metro/C	9 SI/LRT+ Metro/C	10 HI/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Braddock Road	6,735	6,740	6,818	6,798	6,678	6,799	6,829	6,731	6,770	6,694	6,773	6,530	6,588	6,665	6,643	6,732	6,890
VA 236	4,317	4,427	4,262	4,089	4,171	4,069	4,153	4,192	4,258	4,143	4,087	4,200	4,180	4,227	4,590	4,100	4,199
Gallows Road	3,471	3,550	3,387	3,352	3,362	3,371	3,399	3,380	3,425	3,379	3,408	3,289	3,398	3,008	3,411	4,596	3,398
US 50	4,707	4,612	4,646	4,631	3,972	4,243	4,436	4,583	4,597	4,401	4,567	4,208	4,504	4,154	4,059	4,316	4,711
US 29	4,740	4,672	4,734	4,582	4,803	4,511	4,597	4,803	4,559	4,625	4,641	4,661	4,484	4,562	4,718	5,108	4,819
I-66 HOV WB	1,842	1,857	1,857	2,671	1,849	1,975	2,815	2,830	1,799	2,520	2,666	1,892	2,708	8,418	1,789	1,788	1,850
I-66 WB	5,704	5,784	5,742	7,882	7,585	7,583	6,384	6,424	5,837	7,760	7,765	7,650	6,370	3,873	5,814	6,121	5,717
Iodywood Road	1,287	1,271	1,291	1,348	1,325	1,348	1,261	1,278	1,290	1,291	1,334	1,355	1,275	1,317	1,311	1,208	1,277
Oak St	916	898	917	988	937	932	913	941	928	922	901	944	913	1,005	922	795	920
VA 7	5,505	5,445	5,561	5,387	5,283	5,369	5,544	5,562	5,622	5,580	5,514	5,313	5,584	5,341	5,575	5,309	5,602
VA 123	6,535	6,462	6,638	6,501	6,503	6,540	6,546	6,575	6,567	6,569	6,479	6,494	6,584	6,512	6,628	6,326	6,532
I-66 WB	7,552	7,626	7,599	10,553	9,434	9,558	9,199	9,254	7,636	10,280	10,431	9,542	9,078	12,291	7,603	7,909	7,567
Other	38,313	38,077	38,254	37,646	37,034	37,182	37,478	38,045	38,016	37,604	37,704	36,994	37,450	36,791	38,457	38,488	38,348
Total	45,865	45,703	45,853	48,199	46,468	46,740	46,577	47,299	45,652	47,884	48,135	46,536	46,528	49,082	46,060	46,397	45,915

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SIHOV+ LRT	8 SIHOV+ Metro/C	9 SI/LRT+ Metro/C	10 HI/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Lawyers Rd	883	905	883	787	847	799	829	850	862	790	752	771	832	815	911	833	891
Vale Rd	1,605	1,545	1,595	1,395	1,485	1,479	1,436	1,436	1,498	1,486	1,377	1,485	1,485	1,508	1,523	1,501	1,504
Oakton Rd	1,355	1,360	1,444	1,156	1,313	1,255	1,275	1,251	1,350	1,257	1,142	1,153	1,280	1,291	1,367	1,321	1,374
I-66 WB	6,435	6,294	6,513	7,972	7,996	7,717	6,766	6,754	6,551	8,214	7,980	7,958	6,538	3,886	6,368	6,424	6,470
I-66 WB HOV	1,982	2,051	2,006	3,696	1,964	1,955	3,846	3,886	1,968	3,735	3,659	1,853	3,838	9,518	2,029	2,039	1,998
US 50	3,589	3,614	3,578	4,260	3,369	4,292	3,463	3,429	3,503	3,420	4,244	4,512	3,452	3,481	3,780	3,489	3,570
US 29	2,785	2,918	2,816	4,519	2,933	4,741	2,826	2,717	2,856	2,652	4,428	4,365	2,608	2,757	2,827	3,982	2,714
Braddock Rd	4,082	4,214	4,143	3,935	4,073	4,034	4,012	3,941	4,222	4,125	3,929	3,940	3,961	3,901	4,242	4,203	4,090
Popes Head Rd	1,041	928	1,041	931	907	950	942	976	891	945	859	912	971	891	889	883	994
Fairfax Station Rd	578	570	550	487	552	422	523	530	514	511	473	425	513	505	530	567	567
I-66 WB	8,417	8,345	8,519	11,688	9,960	9,672	10,612	10,640	8,519	11,949	11,639	9,811	10,375	12,904	8,397	8,463	8,468
Other	15,898	16,054	16,050	17,470	15,479	17,972	15,108	15,130	15,796	15,186	17,304	17,563	15,102	15,149	16,169	16,878	15,704
Total	24,315	24,399	24,569	29,138	25,439	27,644	25,718	25,770	24,315	27,135	28,943	27,374	25,478	28,053	24,568	25,342	24,172

Screen Line 2 East-Central

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Screen Line 3 Central-West

Table 3
I-66 2020 P.M. Peak Hour/Peak Direction Traffic by Screenline

Location	Enhanced Base	VRE	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 SLRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
VA 28 (south)	2,927	3,008	2,789	3,029	3,058	2,729	2,822	2,907	2,704	2,799	3,038	2,778	2,726	2,816	3,597	2,937
VA 28 Bypass	3,456	3,547	3,949	3,587	3,638	3,716	3,969	3,561	3,848	3,966	3,513	3,671	3,900	3,542	3,837	3,575
I-66 WB HOV	1,375	1,377	2,183	1,360	1,428	2,237	2,263	1,287	2,121	2,202	1,442	2,205	7,197	1,390	1,318	1,392
I-66 WB	4,330	4,451	5,880	4,287	4,660	4,795	4,600	4,770	5,752	5,957	4,592	4,569	1,897	4,639	4,735	4,819
US 29	1,775	1,668	1,774	1,932	1,670	1,610	1,649	1,684	1,663	1,745	1,909	1,561	1,414	1,701	2,117	1,631
Bull Run Post Office Rd	513	501	668	449	621	665	650	520	711	674	559	623	529	596	1,219	613
Braddock Rd	787	842	771	876	1,026	806	820	891	653	790	993	829	650	688	663	893
Pleasant Valley Rd	851	877	648	851	799	762	830	862	731	840	836	801	720	868	508	855
US 50	3,822	3,918	3,966	3,878	4,240	3,768	3,848	3,834	3,738	3,941	4,211	3,806	3,657	4,112	4,711	3,910
VA 28 (north)	5,314	5,341	5,176	5,368	5,174	5,391	5,411	5,431	5,330	5,161	5,233	5,517	5,130	5,306	7,033	5,314
I-66 WB	5,705	5,828	8,063	5,647	6,088	6,972	6,863	6,057	7,873	8,159	6,024	6,774	9,094	6,029	6,053	6,211
Other	19,447	19,702	19,741	19,970	20,226	19,447	19,999	19,690	19,378	19,746	20,292	19,586	18,726	19,629	23,685	19,728
Total	25,152	25,530	27,804	25,617	26,314	26,419	26,862	25,747	27,251	27,905	26,316	26,360	27,820	25,658	29,738	25,939

Screen Line 4 West-Outer

Location	Enhanced Base	VRE	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 SLRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Gum Springs	1,793	1,835	1,638	1,692	1,773	1,678	1,667	1,707	1,664	1,607	1,784	1,673	1,570	1,808	617	1,766
VA 234	1,183	1,198	1,254	1,139	1,233	1,135	1,156	1,140	1,188	1,198	1,230	1,163	1,256	1,129	1,010	1,174
Old Carolina Rd	714	701	710	756	694	731	739	703	746	706	708	728	646	663	635	688
I-66 WB	4,121	4,161	4,350	4,234	4,311	4,209	4,220	4,247	4,262	4,307	4,215	4,233	4,480	4,169	3,520	4,223
VA 55	816	829	863	811	862	801	817	840	853	852	813	818	892	834	639	879
US 29	2,541	2,530	2,446	2,570	2,569	2,352	2,382	2,599	2,350	2,430	2,418	2,374	2,483	2,372	2,892	2,484
Glenkirk Rd	1,102	1,129	1,119	1,073	1,129	1,021	1,003	1,114	1,149	1,085	1,258	1,003	1,334	1,206	895	1,176
VA 28	4,066	4,183	4,090	4,079	4,153	4,248	4,143	4,284	4,098	4,212	4,278	4,085	4,213	4,022	3,903	4,128
I-66 WB	4,121	4,161	4,350	4,234	4,311	4,209	4,220	4,247	4,262	4,307	4,215	4,233	4,480	4,169	3,520	4,223
Other	12,215	12,405	12,120	12,120	12,413	11,966	11,907	12,387	12,068	12,090	12,489	11,844	12,394	12,032	10,691	12,295
Total	16,336	16,566	16,470	16,354	16,724	16,175	16,127	16,634	16,330	16,397	16,704	16,077	16,874	16,201	14,211	16,519

DRAFT**Screen Line 5 Outer Corridor - S**

Location	Enhanced Base	CLRP	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 SILRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Crest Hill Rd	147	148	209	188	213	146	190	241	150	215	186	205	251	155	179	198
US 17 S	1,651	1,650	1,636	1,616	1,651	1,641	1,641	1,652	1,639	1,649	1,652	1,640	1,646	1,661	1,560	1,655
VA 245	1,361	1,367	1,409	1,409	1,391	1,370	1,372	1,417	1,389	1,409	1,386	1,391	1,449	1,373	1,443	1,393
US 15	1,077	1,071	998	1,095	1,095	987	993	1,086	982	984	1,079	988	1,089	0	0	1,077
Total	4,258	4,236	4,252	4,308	4,350	4,128	4,196	4,406	4,154	4,257	4,303	4,224	4,435	3,189	3,182	4,323

Screen Line 6 West Corridor - S

Location	Enhanced Base	CLRP	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 SILRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Old Carolina Rd	714	703	710	756	694	731	739	703	746	706	708	728	646	663	689	688
Catharlin Road	250	266	216	277	297	282	255	286	213	212	284	263	242	223	85	274
29 HOV SB	0	0	367	0	0	426	412	0	422	442	0	419	0	0	0	0
US 29	4,481	4,466	4,741	4,435	4,363	4,371	4,387	4,460	4,696	4,766	4,456	4,290	5,384	4,468	4,522	4,475
VA 234 Bypass	2,925	3,144	3,696	2,957	3,140	3,397	3,286	3,107	3,607	3,694	3,193	3,136	3,420	3,080	3,769	3,386
VA 234	3,612	3,580	3,797	3,593	3,746	3,569	3,637	3,579	3,735	3,790	3,632	3,619	4,095	3,556	3,236	3,618
Total	11,982	12,159	13,527	12,018	12,240	12,756	12,716	12,135	13,419	13,600	12,273	12,455	13,787	11,990	12,301	12,441

Screen Line 7 Central Corridor - S

Location	Enhanced Base	CLRP	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 SILRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
VA 28 Bypass	3,458	3,370	3,949	3,587	3,638	3,716	3,969	3,554	3,848	3,998	3,505	3,658	3,900	3,542	3,837	3,575
Compton Road	546	548	285	556	336	350	419	385	352	325	340	416	510	404	183	387
Stone/Braddock	0	0	1,611	0	1,574	1,600	1,814	1,755	1,678	1,609	1,677	1,783	0	1,677	1,501	1,803
US 29	2,578	2,526	3,139	2,709	3,500	2,088	2,225	2,251	2,283	3,063	3,343	2,105	2,491	2,076	3,171	2,223
VA 28	4,533	4,621	4,883	4,546	4,798	4,322	4,343	4,220	4,238	4,760	4,785	4,314	4,599	4,277	5,673	4,268
Stringfellow Road	2,044	2,013	1,754	1,989	1,754	1,877	2,013	1,968	1,937	1,739	1,754	2,010	1,946	1,925	1,764	2,015
Fairfax County Parkway	4,979	4,947	4,518	4,870	4,689	4,628	4,800	4,885	4,813	4,563	4,670	4,885	4,805	5,012	4,764	4,867
West Ox Road	2,511	2,515	2,367	2,484	2,847	2,329	2,295	2,415	2,199	2,361	2,597	2,286	2,412	2,297	2,189	2,388
Monument Drive	1,605	1,616	1,353	1,580	1,267	1,675	1,675	1,526	1,625	1,304	1,200	1,651	1,492	1,744	1,608	1,528
US 50	3,762	3,812	4,604	3,540	4,288	3,505	3,511	3,561	3,625	4,651	4,493	3,579	3,954	3,844	3,524	3,626
Total	26,016	25,968	28,463	25,861	28,491	26,090	27,064	26,520	26,598	28,371	28,364	26,687	26,109	26,798	28,214	26,681

Table 3
I-66 2020 P.M. Peak Hour/Peak Direction Traffic by Screenline

02-Dec-97

Table 3
I-66 2020 P.M. Peak Hour/Peak Direction Traffic by Screenline

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Screen Line 8 East Corridor - S

02-Dec-97

Location	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 SI/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Waples Mill Road	1,248	1,270	1,213	1,181	1,210	1,279	1,210	1,256	1,233	1,172	1,182	1,288	1,168	1,256	1,742	1,210
Jermantown	1,439	1,457	1,564	1,535	1,624	1,384	1,451	1,529	1,403	1,500	1,621	1,393	1,492	1,437	1,480	1,434
VA 123	3,357	3,470	3,072	3,039	3,042	3,302	3,113	3,339	3,461	2,964	3,263	3,446	3,035	3,208	3,163	3,144
Blake Lane	3,126	3,219	3,137	3,161	3,103	3,120	3,053	3,152	3,179	3,084	3,047	3,154	3,055	3,154	3,080	3,118
Nutley Street	3,138	3,078	3,236	3,218	3,271	3,362	3,505	3,050	3,379	3,371	3,448	3,256	3,131	3,046	2,968	3,230
Cedar Lane	939	894	914	927	866	875	912	865	911	899	890	886	888	873	830	881
Gallows Road	3,330	3,308	3,408	3,381	3,345	3,343	3,369	3,363	3,378	3,345	3,336	3,345	3,148	3,403	4,366	3,338
I-495 HOV NB	646	691	710	652	650	735	734	671	726	714	660	741	10,019	663	655	660
I-495 NB	8,893	8,827	9,236	8,825	8,740	9,287	9,067	9,023	9,272	9,198	8,790	9,132	2,253	8,928	8,822	8,893
I-495 NB	9,539	9,518	9,946	9,477	9,390	10,022	9,801	9,694	9,998	9,912	9,450	9,873	12,272	9,591	9,477	9,553
Other	16,375	16,696	16,544	16,442	16,491	16,665	16,813	16,554	16,944	16,335	16,787	16,768	15,917	16,377	17,629	16,355
Total	25,914	26,214	26,490	25,919	25,861	26,687	26,414	26,248	26,942	26,247	26,237	26,641	28,189	25,968	27,106	25,908

Screen Line 9 East Corridor - N

Location	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 SI/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
I-495 NB	7,902	8,050	7,772	8,173	8,445	7,815	7,671	7,937	7,800	7,756	8,487	7,720	2,640	7,876	7,448	7,961
I-495 HOV NB	569	590	612	625	631	581	581	588	625	606	626	583	8,835	571	557	576
Gallows Road	3,330	3,308	3,408	3,381	3,345	3,343	3,369	3,363	3,378	3,345	3,336	3,345	3,148	3,403	4,366	3,338
Cedar Lane	939	916	928	930	913	886	919	887	904	934	906	904	897	876	837	903
Nutley Street	2,862	2,866	3,153	3,008	3,008	2,981	2,971	2,896	3,142	3,088	2,985	2,973	2,861	2,895	2,752	2,952
Blake Lane	3,126	3,219	3,137	3,161	3,103	3,120	3,053	3,152	3,179	3,084	3,047	3,154	3,055	3,154	3,080	3,118
VA 123	2,231	2,201	2,280	2,349	2,307	2,199	2,254	2,322	2,251	2,384	2,421	2,315	2,177	2,224	2,675	2,291
Jermantown Road	1,517	1,439	1,564	1,535	1,624	1,384	1,451	1,528	1,403	1,500	1,621	1,393	1,492	1,437	1,480	1,434
Waples Mill Road	1,224	1,270	1,213	1,181	1,210	1,279	1,210	1,256	1,233	1,172	1,182	1,288	1,168	1,256	1,742	1,210
I-495 NB	8,471	8,640	8,384	8,798	9,076	8,396	8,252	8,525	8,425	8,362	9,113	8,303	11,475	8,447	8,005	8,537
Other	15,229	15,237	15,683	15,545	15,510	15,192	15,227	15,405	15,490	15,507	15,498	15,372	14,798	15,245	16,932	15,246
Total	23,700	23,877	24,067	24,343	24,586	23,588	23,479	23,930	23,915	23,869	24,611	23,675	26,273	23,692	24,937	23,763

Table 3
I-66 2020 P.M. Peak Hour/Peak Direction Traffic by Screenline

02-Dec-97																	
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Screen Line 10 Central Corridor - N																	
Location	Enhanced Base	CLRP	VRE	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHO+ LRT	8 SHO+ Metro/C	9 SILRT+ Metro/C	10 HLRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
US 50	3,937	3,837	3,853	5,462	4,096	5,452	3,991	4,000	3,867	3,920	5,389	5,399	4,053	3,967	3,935	3,910	3,901
Monument	2,056	2,036	2,008	1,295	2,062	1,742	1,752	1,708	1,923	1,714	1,260	1,762	1,718	1,775	2,127	1,987	1,920
West Ox Road	2,650	2,676	2,612	2,575	2,624	2,737	2,645	2,653	2,576	2,550	2,605	2,713	2,646	2,505	2,500	2,449	2,558
Fairfax County Parkway	4,693	4,581	4,594	4,573	4,890	4,587	4,638	4,691	4,706	4,743	4,592	4,543	4,744	4,839	4,695	4,279	4,701
Stringfellow Road	1,826	1,852	1,813	1,480	1,813	1,622	1,595	1,696	1,766	1,633	1,446	1,608	1,713	1,805	1,654	1,552	1,808
VA 28	6,894	6,749	6,824	6,358	6,750	6,498	6,287	6,385	6,697	6,353	6,388	6,415	6,391	6,885	6,699	8,457	6,948
US 29	2,318	2,388	2,297	2,254	2,373	2,030	1,960	1,884	2,128	2,103	2,144	2,083	1,817	2,311	1,854	2,435	1,970
Stone/Braddock	0	0	0	2,051	0	1,574	2,210	2,283	1,863	2,272	2,132	1,856	2,283	0	1,708	1,501	1,803
Compton Road	548	546	559	285	556	336	350	419	385	352	325	340	416	510	404	183	387
Total	24,822	24,764	24,550	26,333	25,164	26,578	25,428	25,719	25,931	25,640	26,281	26,719	25,781	24,597	25,876	26,753	25,996
Screen Line 11 West Corridor - N																	
Location	Enhanced Base	CLRP	VRE	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHO+ LRT	8 SHO+ Metro/C	9 SILRT+ Metro/C	10 HLRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
VA 234	2,012	1,986	2,043	1,849	2,069	1,934	1,869	1,883	1,988	1,834	1,841	1,962	1,877	1,889	1,902	1,017	1,950
US 29	2,429	2,472	2,421	2,221	2,554	2,342	2,360	2,423	2,403	2,177	2,239	2,556	2,293	1,870	2,404	2,240	2,410
Calhoun Road	266	250	274	216	277	297	262	255	286	213	212	284	263	242	223	85	274
Old Carolina Rd	703	714	701	710	756	694	731	739	703	746	706	708	728	646	663	689	688
Total	5,410	5,422	5,439	4,996	5,656	5,267	5,222	5,300	5,360	4,970	4,998	5,510	5,161	4,647	5,192	4,031	5,322
Screen Line 12 Outer Corridor - N																	
Location	Enhanced Base	CLRP	VRE	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHO+ LRT	8 SHO+ Metro/C	9 SILRT+ Metro/C	10 HLRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
US 15	1,673	1,666	1,696	1,650	1,666	1,685	1,678	1,685	1,664	1,655	1,641	1,648	1,667	1,665	1,722	1,335	1,697
Antioch Rd	154	164	156	167	156	169	160	164	160	163	169	162	162	157	155	107	164
Hopewell Rd	1,172	1,183	1,171	1,108	1,207	1,166	1,080	1,108	1,194	1,114	1,131	1,182	1,127	1,049	1,160	1,066	1,166
Redtown Rd	1,195	1,204	1,197	1,128	1,140	1,187	1,163	1,165	1,220	1,145	1,155	1,183	1,162	1,150	1,196	1,067	1,186
US 17 N	724	729	725	757	720	731	753	746	729	755	747	721	737	740	735	708	735
Total	4,918	4,946	4,945	4,808	4,889	4,938	4,834	4,868	4,967	4,832	4,843	4,896	4,855	4,761	4,968	4,283	4,948

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Screenline Summary

Table 3
I-66 2020 P.M. Peak Hour/Peak Direction Traffic by Screenline

		1	2	3	4	5	6	7	8	9	10	11	12	13	02-Dec-97
		SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SHOV+ LRT	SHOV+ Metro/C	S/LRT+ Metro/C	H/LRT+ Metro/C	Expt/ Local	Super Bus	County Highway	Metro/G
Enhanced Base	CLRP	VRE													
Screen Line 1 Outside I-495															
I-66 WB	7,626	7,599	9,434	9,558	9,199	9,254	7,636	10,280	10,431	9,542	9,078	12,291	7,603	7,909	7,567
Other	38,077	38,254	37,034	37,182	37,478	38,045	38,016	37,604	37,704	36,994	37,450	38,791	38,457	38,488	38,348
Total	45,703	45,853	46,468	46,740	46,677	47,299	45,652	47,884	48,135	46,536	46,528	49,082	48,060	46,397	45,915
Screen Line 2 East-Central															
I-66 WB	8,345	8,519	9,960	9,672	10,612	10,640	8,519	11,949	11,639	9,811	10,376	12,904	8,397	8,463	8,468
Other	16,054	16,050	15,479	17,972	15,106	15,130	15,796	15,186	17,304	17,563	15,102	15,149	16,169	16,879	15,704
Total	24,399	24,569	25,439	27,644	25,718	25,770	24,315	27,135	28,943	27,374	25,478	28,053	24,566	25,342	24,172
Screen Line 3 Central-West															
I-66 WB	5,993	5,828	5,647	6,068	6,972	6,863	6,057	7,873	8,159	6,024	6,774	9,094	6,029	6,053	6,211
Other	19,477	19,702	19,970	20,226	19,447	19,999	19,690	19,378	19,746	20,292	19,586	18,726	19,629	23,695	19,728
Total	25,470	25,530	25,617	26,314	26,419	26,862	25,747	27,251	27,905	26,316	26,360	27,820	25,658	29,738	25,939
Screen Line 4 West-Outer															
I-66 WB	4,114	4,161	4,234	4,311	4,209	4,220	4,247	4,262	4,307	4,215	4,233	4,480	4,169	3,520	4,223
Other	12,319	12,405	12,120	12,413	11,966	11,907	12,387	12,068	12,090	12,489	11,844	12,394	12,032	10,691	12,295
Total	16,433	16,566	16,354	16,724	16,175	16,127	16,634	16,330	16,397	16,704	16,077	16,874	16,201	14,211	16,518
Screen Line 5 Outer Corridor - S															
Total	4,236	4,260	4,308	4,350	4,128	4,196	4,406	4,154	4,257	4,303	4,224	4,435	3,189	3,182	4,323
Screen Line 6 West Corridor - S															
Total	12,159	12,084	12,018	12,240	12,756	12,716	12,135	13,419	13,600	12,273	12,455	13,787	11,990	12,301	12,441
Screen Line 7 Central Corridor - S															
Total	25,968	26,016	25,861	28,491	26,090	27,064	26,520	26,598	28,371	28,364	26,687	28,109	26,798	28,214	26,681
Screen Line 8 East Corridor - S															
I-495 NB	9,539	9,518	9,477	9,390	10,022	9,801	9,694	9,998	9,912	9,450	9,873	12,272	9,591	9,477	9,553
Other	16,375	16,696	16,442	16,491	16,665	16,613	16,554	16,944	16,335	16,787	16,768	15,917	16,377	17,629	16,355
Total	25,914	26,214	25,919	25,881	26,687	26,414	26,248	26,942	26,247	26,237	26,641	28,189	25,968	27,106	25,908
Screen Line 9 East Corridor - N															
I-495 NB	8,471	8,640	8,798	9,076	8,396	8,252	8,525	8,425	8,362	9,113	8,303	11,475	8,447	8,005	8,537
Other	15,229	15,237	15,545	15,510	15,192	15,227	15,405	15,490	15,507	15,498	15,372	14,798	15,245	16,932	15,246
Total	23,700	23,877	24,343	24,586	23,588	23,479	23,930	23,915	23,869	24,611	23,675	26,273	23,692	24,937	23,783
Screen Line 10 Central Corridor - N															
Total	24,822	24,560	25,164	28,578	25,428	25,719	25,931	25,640	26,281	26,719	25,781	24,597	25,676	28,753	25,996
Screen Line 11 West Corridor - N															
Total	5,410	5,439	5,656	5,267	5,222	5,300	5,360	4,970	4,998	5,510	5,181	4,647	5,182	4,031	5,322
Screen Line 12 Outer Corridor - N															
Total	4,916	4,946	4,889	4,938	4,834	4,868	4,967	4,832	4,843	4,898	4,855	4,761	4,968	4,283	4,948

Table 4
I-66 2020 P.M. Peak Hour/Peak Direction Volume/Capacity Ratio by Screenline

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Screen Line 1 Outside I-495

02-Dec-97

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 S/HOV+ LRT	8 S/HOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Braddock Road	2.04	2.04	2.07	2.06	2.02	2.06	2.01	2.04	2.05	2.03	2.05	1.98	2.00	2.02	2.01	2.04	2.09
VA 236	1.84	1.84	1.78	1.71	1.74	1.70	1.73	1.75	1.77	1.73	1.70	1.75	1.74	1.76	1.91	1.71	1.75
Gallows Road	1.61	1.58	1.54	1.52	1.53	1.53	1.54	1.54	1.56	1.54	1.55	1.50	1.54	1.37	1.55	1.39	1.54
US 50	1.40	1.43	1.41	1.40	1.29	1.29	1.34	1.39	1.38	1.33	1.38	1.28	1.36	1.26	1.41	1.31	1.43
US 29	1.42	1.44	1.43	1.38	1.46	1.37	1.39	1.46	1.38	1.40	1.41	1.41	1.35	1.38	1.43	1.55	1.46
I-66 HOV WB	1.19	1.19	1.20	0.76	1.19	1.27	0.80	0.81	1.16	0.72	0.76	1.22	0.77	1.20	1.15	1.15	1.19
I-66 WB	1.10	1.09	1.09	1.13	1.08	1.08	1.22	1.22	1.11	1.11	1.11	1.09	1.21	1.11	1.11	1.17	1.09
Idylwood Road	1.27	1.29	1.29	1.35	1.33	1.35	1.26	1.28	1.29	1.29	1.33	1.36	1.27	1.32	1.31	1.21	1.28
Oak St	0.82	0.83	0.83	0.88	0.85	0.85	0.83	0.86	0.84	0.84	0.82	0.86	0.83	0.91	0.84	0.72	0.84
VA 7	1.24	1.25	1.26	1.22	1.20	1.22	1.26	1.26	1.28	1.27	1.25	1.21	1.26	1.21	1.27	1.21	1.27
VA 123	1.47	1.51	1.51	1.48	1.48	1.49	1.49	1.49	1.49	1.49	1.47	1.48	1.49	1.48	1.51	1.44	1.48
I-66 WB	1.12	1.11	1.12	1.01	1.10	1.12	1.05	1.06	1.12	0.98	0.99	1.12	1.04	1.17	1.12	1.16	1.11
Other	1.50	1.51	1.51	1.48	1.46	1.46	1.48	1.50	1.50	1.48	1.48	1.46	1.47	1.45	1.51	1.45	1.51
Total	1.42	1.42	1.42	1.34	1.37	1.38	1.37	1.39	1.42	1.33	1.34	1.37	1.36	1.37	1.43	1.39	1.43

Screen Line 2 East-Central

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 S/HOV+ LRT	8 S/HOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Lawyers Rd	0.90	0.90	0.88	0.79	0.85	0.80	0.83	0.85	0.86	0.79	0.75	0.77	0.83	0.81	0.91	0.83	0.89
Vale Rd	1.29	1.34	1.33	1.16	1.24	1.23	1.20	1.20	1.25	1.24	1.15	1.24	1.24	1.26	1.27	1.25	1.25
Oakton Rd	1.36	1.36	1.44	1.16	1.31	1.25	1.27	1.25	1.35	1.26	1.14	1.15	1.28	1.29	1.37	1.32	1.37
I-66 WB	1.20	1.23	1.24	1.14	1.14	1.10	1.29	1.29	1.25	1.17	1.14	1.14	1.25	0.97	1.21	1.22	1.23
I-66 WB HOV	1.32	1.28	1.29	1.06	1.27	1.26	1.10	1.11	1.27	1.07	1.05	1.20	1.10	1.36	1.31	1.32	1.29
US 50	1.64	1.63	1.63	1.18	1.53	1.19	1.57	1.58	1.59	1.55	1.18	1.25	1.57	1.58	1.72	1.59	1.62
US 29	1.33	1.27	1.28	0.97	1.33	1.02	1.19	1.24	1.30	1.21	0.95	0.94	1.19	1.25	1.28	1.21	1.23
Braddock Rd	0.97	0.94	0.95	0.90	0.94	0.93	0.92	0.91	0.97	0.95	0.90	0.91	0.91	0.90	0.98	0.97	0.94
Popes Head Rd	1.03	1.13	1.16	1.03	1.01	1.06	1.05	1.08	1.10	1.05	1.07	1.01	1.08	0.99	1.10	1.09	1.10
Fairfax Station Rd	0.63	0.64	0.61	0.54	0.61	0.47	0.58	0.59	0.57	0.57	0.53	0.47	0.57	0.56	0.59	0.63	0.63
I-66 WB	1.23	1.24	1.25	1.11	1.16	1.13	1.21	1.22	1.25	1.14	1.11	1.15	1.19	1.23	1.23	1.24	1.25
Other	1.17	1.16	1.17	0.99	1.13	1.02	1.10	1.10	1.15	1.10	0.98	1.00	1.10	1.10	1.18	1.14	1.14
Total	1.19	1.18	1.20	1.04	1.14	1.06	1.14	1.15	1.18	1.12	1.03	1.05	1.13	1.16	1.20	1.17	1.18

Table 4
I-66 2020 P.M. Peak Hour/Peak Direction Volume/Capacity Ratio by Screenline

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Screen Line 3 Central-West

02-Dec-97

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Exp/Local	12 Super Bus	13 County Highway	14 Metro/G
VA 28 (south)	1.37	1.39	1.33	1.27	1.38	1.39	1.24	1.28	1.32	1.23	1.27	1.38	1.26	1.24	1.28	1.09	1.34
VA 28 Bypass	0.96	0.91	0.93	1.07	0.97	0.98	1.00	1.07	0.96	1.04	1.08	0.95	0.99	1.05	0.96	1.04	0.97
I-66 WB HOV	0.76	0.73	0.76	0.53	0.76	0.79	0.55	0.55	0.71	0.52	0.54	0.80	0.54	0.88	0.77	0.73	0.77
I-66 WB	0.72	0.76	0.70	0.72	0.70	0.76	0.77	0.75	0.78	0.70	0.73	0.75	0.74	0.46	0.75	0.77	0.78
US 29	1.15	1.13	1.22	1.22	1.33	1.15	1.11	1.14	1.16	1.15	1.20	1.32	1.08	0.98	1.17	1.46	1.12
Bull Run Post Office Rd	0.56	0.56	0.57	0.74	0.50	0.69	0.74	0.72	0.58	0.79	0.75	0.62	0.69	0.59	0.66	0.34	0.68
Braddock Rd	0.94	0.96	0.87	0.86	0.97	1.14	0.90	0.91	0.99	0.73	0.88	1.10	0.92	0.72	0.76	0.74	0.99
Pleasant Valley Rd	0.97	1.01	0.95	0.72	0.95	0.89	0.85	0.92	0.96	0.81	0.71	0.93	0.89	0.80	0.96	0.21	0.95
US 50	0.90	0.89	0.88	0.91	0.89	0.97	0.87	0.88	0.88	0.86	0.91	0.97	0.87	0.84	0.95	1.08	0.90
VA 28 (north)	1.08	1.06	1.07	1.05	1.08	1.05	1.09	1.09	1.10	1.08	1.04	1.06	1.11	1.04	1.07	0.93	1.07
I-66 WB	0.73	0.75	0.72	0.66	0.71	0.77	0.68	0.67	0.76	0.64	0.66	0.76	0.66	0.74	0.76	0.76	0.78
Other	1.02	1.01	1.01	1.02	1.03	1.05	1.01	1.03	1.02	1.00	1.02	1.05	1.01	0.97	1.01	0.87	1.02
Total	0.94	0.93	0.92	0.88	0.94	0.96	0.89	0.91	0.94	0.86	0.88	0.96	0.89	0.88	0.94	0.84	0.95

Screen Line 4 West-Outer

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Exp/Local	12 Super Bus	13 County Highway	14 Metro/G
Gum Springs	1.12	1.05	1.15	1.02	1.06	1.11	1.05	1.04	1.07	1.05	1.00	1.12	1.05	0.98	1.13	0.39	1.10
VA 234	1.13	1.11	1.14	1.19	1.08	1.17	1.08	1.10	1.09	1.13	1.14	1.17	1.11	1.20	1.08	0.35	1.12
Old Carolina Rd	0.68	0.67	0.67	0.68	0.72	0.66	0.70	0.70	0.67	0.71	0.67	0.67	0.69	0.62	0.63	0.60	0.66
I-66 WB	1.08	1.08	1.10	1.14	1.11	1.13	1.11	1.11	1.12	1.12	1.13	1.11	1.11	1.16	1.10	0.93	1.11
VA 55	0.74	0.74	0.75	0.78	0.74	0.78	0.73	0.74	0.76	0.78	0.77	0.74	0.74	0.81	0.76	0.58	0.80
US 29	0.87	0.87	0.87	0.84	0.89	0.89	0.81	0.82	0.90	0.81	0.84	0.83	0.82	0.86	0.82	0.69	0.86
Glenkirk Rd	1.10	1.16	1.13	1.12	1.07	1.13	1.02	1.00	1.11	1.15	1.09	1.26	1.00	1.33	1.21	0.89	1.18
VA 28	1.27	1.34	1.31	1.28	1.27	1.30	1.33	1.29	1.34	1.28	1.32	1.34	1.28	1.32	1.26	1.22	1.29
I-66 WB	1.08	1.08	1.10	1.14	1.11	1.13	1.11	1.11	1.12	1.12	1.13	1.11	1.11	1.18	1.10	0.93	1.11
Other	1.03	1.04	1.04	1.02	1.02	1.04	1.01	1.00	1.04	1.01	1.02	1.05	1.00	1.04	1.01	0.70	1.03
Total	1.04	1.05	1.06	1.05	1.04	1.07	1.03	1.03	1.06	1.04	1.04	1.06	1.02	1.07	1.03	0.75	1.05

Table 4
I-66 2020 P.M. Peak Hour/Peak Direction Volume/Capacity Ratio by Screenline

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Screen Line 5 Outer Corridor - S

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 S/HOV+ LRT	8 S/HOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Crest Hill Rd	0.15	0.15	0.18	0.21	0.19	0.21	0.15	0.19	0.24	0.15	0.22	0.19	0.20	0.25	0.16	0.18	0.20
US 17 S	0.52	0.52	0.52	0.51	0.50	0.52	0.51	0.51	0.52	0.51	0.52	0.52	0.51	0.51	0.52	0.49	0.52
VA 245	1.24	1.25	1.24	1.28	1.28	1.26	1.25	1.25	1.29	1.26	1.28	1.26	1.26	1.32	1.25	1.31	1.27
US 15	0.49	0.49	0.48	0.45	0.50	0.50	0.44	0.45	0.49	0.45	0.45	0.49	0.45	0.50	0.00	0.00	0.49
Total	0.56	0.57	0.57	0.57	0.57	0.58	0.55	0.56	0.59	0.55	0.57	0.57	0.56	0.59	0.60	0.60	0.58

Screen Line 6 West Corridor - S

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 S/HOV+ LRT	8 S/HOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Old Carolina Rd	0.74	0.75	0.74	0.75	0.80	0.73	0.77	0.78	0.74	0.79	0.74	0.75	0.77	0.68	0.70	0.73	0.72
Calharpin Road	0.20	0.19	0.21	0.17	0.21	0.23	0.20	0.20	0.22	0.16	0.16	0.22	0.20	0.19	0.17	0.07	0.21
29 HOV SB	0.00	0.00	0.00	0.31	0.00	0.00	0.35	0.34	0.00	0.35	0.37	0.00	0.35	0.00	0.00	0.00	0.00
US 29	1.03	1.03	1.04	1.09	1.02	1.00	1.00	1.01	1.03	1.08	1.09	1.02	0.99	1.24	1.03	1.04	1.03
VA 234 Bypass	0.55	0.51	0.52	0.65	0.52	0.55	0.60	0.58	0.55	0.63	0.65	0.56	0.55	0.60	0.54	0.66	0.59
VA 234	1.08	1.09	1.09	1.15	1.09	1.14	1.08	1.10	1.08	1.13	1.15	1.10	1.10	1.24	1.08	0.98	1.10
Total	0.78	0.77	0.77	0.81	0.77	0.78	0.76	0.76	0.78	0.80	0.81	0.79	0.74	0.88	0.77	0.79	0.80

Screen Line 7 Central Corridor - S

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 S/HOV+ LRT	8 S/HOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
VA 28 Bypass	0.91	0.93	0.96	1.07	0.97	0.98	1.00	1.07	0.96	1.04	1.08	0.95	0.99	1.05	0.96	0.69	0.97
Compton Road	0.84	0.84	0.86	0.44	0.86	0.52	0.54	0.64	0.59	0.54	0.50	0.52	0.64	0.78	0.62	0.28	0.60
Stone/Braddock	0.00	0.00	0.00	0.81	0.00	0.79	0.80	0.91	0.88	0.84	0.80	0.84	0.89	0.00	0.84	0.75	0.90
US 29	1.15	1.17	1.19	0.87	1.23	0.97	0.95	1.01	1.02	1.04	0.85	0.93	0.96	1.13	0.94	0.96	1.01
VA 28	0.99	0.97	0.98	1.05	0.98	1.03	0.93	0.91	0.91	0.91	1.02	1.03	0.93	0.89	0.92	1.22	0.92
Stringfellow Road	1.01	1.02	1.00	0.88	0.99	0.88	0.94	1.01	0.98	0.97	0.87	0.88	1.00	0.97	0.96	0.88	1.01
Fairfax County Parkway	1.06	1.07	1.07	0.97	1.05	1.01	1.00	1.03	1.05	1.04	0.98	1.00	1.05	1.03	1.08	1.02	1.05
West Ox Road	0.76	0.76	0.74	0.72	0.75	0.80	0.71	0.70	0.73	0.67	0.72	0.79	0.69	0.73	0.70	0.66	0.72
Monument Drive	0.63	0.63	0.62	0.53	0.62	0.50	0.66	0.66	0.60	0.64	0.51	0.47	0.65	0.59	0.68	0.63	0.60
US 50	0.79	0.78	0.77	0.74	0.74	0.69	0.73	0.73	0.74	0.76	0.75	0.72	0.75	0.82	0.80	0.73	0.76
Total	0.91	0.91	0.91	0.85	0.91	0.86	0.86	0.89	0.87	0.87	0.85	0.85	0.87	0.92	0.88	0.84	0.87

Table 4
I-66 2020 P.M. Peak Hour/Peak Direction Volume/Capacity Ratio by Screenline

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DRAFT

Screen Line 8 East Corridor - S

02-Dec-97

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 S/HOV+ LRT	8 S/HOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Waples Mill Road	1.13	1.11	1.15	1.10	1.07	1.10	1.16	1.10	1.14	1.12	1.07	1.07	1.17	1.06	1.14	0.79	1.10
Jermantown	1.31	1.38	1.32	1.42	1.40	1.48	1.26	1.32	1.39	1.28	1.36	1.47	1.27	1.36	1.31	1.35	1.30
VA 123	1.02	0.94	1.05	0.93	0.92	0.92	1.00	0.94	1.01	1.05	0.90	0.99	1.04	0.92	0.97	0.96	0.95
Blake Lane	1.42	1.42	1.46	1.43	1.44	1.41	1.42	1.39	1.43	1.45	1.40	1.38	1.43	1.39	1.43	1.40	1.42
Nutley Street	1.38	1.43	1.40	1.47	1.46	1.49	1.53	1.59	1.39	1.54	1.53	1.57	1.48	1.42	1.38	1.35	1.47
Cedar Lane	0.80	0.85	0.81	0.83	0.84	0.81	0.80	0.83	0.79	0.83	0.82	0.81	0.81	0.81	0.79	0.75	0.80
Gallows Road	1.51	1.51	1.50	1.55	1.54	1.52	1.52	1.53	1.53	1.54	1.52	1.52	1.52	1.43	1.55	1.32	1.52
I-495 HOV NB	0.38	0.37	0.39	0.41	0.37	0.37	0.42	0.42	0.38	0.41	0.41	0.38	0.42	1.43	0.38	0.37	0.38
I-495 NB	1.28	1.27	1.26	1.32	1.26	1.25	1.33	1.30	1.29	1.32	1.31	1.26	1.30	0.64	1.28	1.26	1.27
I-495 NB	1.10	1.09	1.09	1.14	1.08	1.07	1.15	1.12	1.11	1.14	1.13	1.08	1.13	1.17	1.10	1.08	1.09
Other	1.25	1.24	1.26	1.25	1.25	1.25	1.26	1.26	1.25	1.28	1.24	1.27	1.27	1.21	1.24	1.14	1.24
Total	1.19	1.18	1.19	1.21	1.18	1.18	1.22	1.20	1.20	1.23	1.20	1.20	1.21	1.19	1.18	1.12	1.18

Screen Line 9 East Corridor - N

Location	Enhanced Base	CLRP	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 S/HOV+ LRT	8 S/HOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
I-495 NB	1.12	1.13	1.15	1.11	1.17	1.21	1.12	1.10	1.13	1.11	1.11	1.21	1.10	0.75	1.13	1.06	1.14
I-495 HOV NB	0.33	0.33	0.34	0.35	0.36	0.36	0.33	0.33	0.34	0.36	0.35	0.36	0.33	1.26	0.33	0.32	0.33
Gallows Road	1.51	1.51	1.50	1.55	1.54	1.52	1.52	1.53	1.53	1.54	1.52	1.52	1.52	1.43	1.55	1.32	1.52
Cedar Lane	1.10	1.10	1.08	1.09	1.09	1.07	1.04	1.08	1.04	1.06	1.10	1.07	1.06	1.06	1.03	0.98	1.06
Nutley Street	1.30	1.30	1.30	1.43	1.37	1.37	1.36	1.35	1.32	1.43	1.40	1.36	1.35	1.30	1.32	1.25	1.34
Blake Lane	1.42	1.42	1.46	1.43	1.44	1.41	1.42	1.39	1.43	1.45	1.40	1.38	1.43	1.39	1.43	1.40	1.42
VA 123	1.01	1.01	1.00	1.04	1.07	1.05	1.00	1.02	1.06	1.02	1.08	1.10	1.05	0.99	1.01	0.81	1.04
Jermantown Road	1.31	1.38	1.32	1.42	1.40	1.48	1.26	1.32	1.39	1.28	1.36	1.47	1.27	1.36	1.31	1.35	1.30
Waples Mill Road	1.13	1.11	1.15	1.10	1.07	1.10	1.16	1.10	1.14	1.12	1.07	1.07	1.17	1.06	1.14	0.79	1.10
I-495 NB	0.97	0.97	0.99	0.96	1.01	1.04	0.96	0.94	0.97	0.96	0.95	1.04	0.95	1.09	0.97	0.91	0.98
Other	1.28	1.29	1.29	1.32	1.31	1.31	1.28	1.28	1.30	1.31	1.31	1.31	1.30	1.25	1.29	1.12	1.29
Total	1.15	1.15	1.16	1.17	1.16	1.19	1.15	1.14	1.16	1.16	1.16	1.19	1.15	1.18	1.15	1.04	1.15

Table 4
I-66 2020 P.M. Peak Hour/Peak Direction Volume/Capacity Ratio by Screenline

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DRAFT

Screen Line 10 Central Corridor - N

Location	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SIHOV+ LRT	8 SIHOV+ Metro/C	9 SILRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
US 50	1.07	1.07	1.17	1.14	1.17	1.11	1.11	1.07	1.09	1.16	1.16	1.13	1.10	1.09	1.09	1.08
Monument	0.81	0.79	0.51	0.81	0.68	0.69	0.67	0.75	0.67	0.49	0.69	0.67	0.70	0.83	0.78	0.75
West Ox Road	0.80	0.81	0.78	0.80	0.83	0.80	0.80	0.78	0.77	0.77	0.82	0.80	0.76	0.76	0.74	0.78
Fairfax County Parkway	1.42	1.39	1.39	1.48	1.39	1.41	1.42	1.43	1.44	1.39	1.38	1.44	1.47	1.42	1.30	1.42
Suringfellow Road	0.91	0.93	0.74	0.91	0.81	0.80	0.85	0.88	0.82	0.72	0.80	0.86	0.90	0.88	0.78	0.90
VA 28	1.48	1.45	1.37	1.45	1.40	1.35	1.37	1.44	1.37	1.37	1.38	1.37	1.48	1.44	1.21	1.49
US 29	1.05	1.04	1.02	1.08	0.92	0.89	0.86	0.97	0.96	0.95	0.95	0.83	1.05	0.84	0.74	0.90
Stone/Bradlock	0.00	0.00	1.03	0.00	0.79	1.11	1.14	0.94	1.14	1.07	0.93	1.14	0.00	0.85	0.75	0.90
Compton Road	0.84	0.86	0.44	0.86	0.52	0.54	0.64	0.59	0.54	0.50	0.52	0.64	0.78	0.62	0.28	0.60
Total	1.12	1.11	1.04	1.13	1.05	1.05	1.06	1.07	1.06	1.04	1.06	1.06	1.11	1.06	0.97	1.07

Screen Line 11 West Corridor - N

Location	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SIHOV+ LRT	8 SIHOV+ Metro/C	9 SILRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
VA 234	0.91	0.93	0.84	0.94	0.88	0.85	0.86	0.89	0.83	0.84	0.89	0.85	0.86	0.86	0.46	0.89
US 29	1.01	1.01	0.93	1.06	0.98	0.98	1.01	1.00	0.91	0.93	1.07	0.96	0.78	1.00	0.93	1.00
Calhoun Road	0.20	0.19	0.17	0.21	0.23	0.20	0.20	0.22	0.16	0.16	0.22	0.20	0.19	0.17	0.07	0.21
Old Carolina Rd	0.74	0.74	0.75	0.80	0.73	0.77	0.78	0.74	0.79	0.74	0.75	0.77	0.68	0.70	0.73	0.72
Total	0.79	0.79	0.73	0.83	0.77	0.76	0.77	0.78	0.73	0.73	0.80	0.75	0.68	0.76	0.59	0.78

Screen Line 12 Outer Corridor - N

Location	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SIHOV+ LRT	8 SIHOV+ Metro/C	9 SILRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
US 15	0.84	0.85	0.82	0.83	0.84	0.84	0.84	0.83	0.83	0.82	0.82	0.83	0.83	0.86	0.67	0.85
Antioch Rd	0.19	0.19	0.21	0.19	0.21	0.20	0.20	0.20	0.20	0.21	0.20	0.20	0.20	0.19	0.13	0.20
Hopewell Rd	1.07	1.06	1.01	1.10	1.06	0.98	1.01	1.09	1.01	1.03	1.07	1.02	0.95	1.05	0.97	1.06
Redfortown Rd	1.09	1.09	1.02	1.04	1.08	1.06	1.06	1.11	1.04	1.05	1.08	1.06	1.05	1.09	0.97	1.08
US 17 N	0.54	0.54	0.56	0.53	0.54	0.56	0.55	0.54	0.56	0.55	0.53	0.55	0.55	0.54	0.52	0.54
Total	0.77	0.78	0.78	0.77	0.78	0.76	0.77	0.78	0.76	0.76	0.77	0.78	0.75	0.78	0.67	0.78

DRAFT

Screenline Summary

Table 4
I-66 2020 P.M. Peak Hour/Peak Direction Volume/Capacity Ratio by Screenline

	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SHOV+ Metro/C	9 S/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expt/ Local	12 Super Bus	13 County Highway	02-Dec-97 14 Metro/G
Screen Line 1 Outside I-495																
I-66 WB	1.12	1.12	1.01	1.10	1.12	1.05	1.06	1.12	0.98	0.99	1.12	1.04	1.17	1.12	1.16	1.11
Other	1.50	1.51	1.48	1.46	1.46	1.48	1.50	1.50	1.48	1.48	1.46	1.47	1.45	1.51	1.45	1.51
Total	1.42	1.42	1.34	1.37	1.38	1.37	1.39	1.42	1.33	1.34	1.37	1.36	1.37	1.43	1.39	1.43
Screen Line 2 East-Central																
I-66 WB	1.23	1.25	1.11	1.16	1.13	1.21	1.22	1.25	1.14	1.11	1.15	1.19	1.23	1.23	1.24	1.25
Other	1.17	1.17	0.99	1.13	1.02	1.10	1.10	1.15	1.10	0.98	1.00	1.10	1.10	1.18	1.14	1.14
Total	1.19	1.20	1.04	1.14	1.06	1.14	1.15	1.18	1.12	1.03	1.05	1.13	1.16	1.20	1.17	1.18
Screen Line 3 Central-West																
I-66 WB	0.75	0.73	0.66	0.71	0.77	0.68	0.67	0.76	0.64	0.66	0.76	0.66	0.74	0.76	0.76	0.78
Other	1.01	1.02	1.02	1.03	1.05	1.01	1.03	1.02	1.00	1.02	1.05	1.01	0.97	1.01	0.87	1.02
Total	0.93	0.94	0.88	0.94	0.96	0.89	0.91	0.94	0.86	0.88	0.96	0.89	0.88	0.94	0.84	0.95
Screen Line 4 West-Outer																
I-66 WB	1.08	1.10	1.14	1.11	1.13	1.11	1.11	1.12	1.12	1.13	1.11	1.11	1.18	1.10	0.93	1.11
Other	1.04	1.04	1.02	1.02	1.04	1.01	1.00	1.04	1.01	1.02	1.05	1.00	1.04	1.01	0.70	1.03
Total	1.05	1.06	1.05	1.04	1.07	1.03	1.03	1.05	1.04	1.04	1.06	1.02	1.07	1.03	0.75	1.05
Screen Line 5 Outer Corridor - S																
Total	0.56	0.57	0.57	0.57	0.59	0.55	0.56	0.59	0.55	0.57	0.57	0.56	0.59	0.60	0.60	0.56
Screen Line 6 West Corridor - S																
Total	0.78	0.77	0.81	0.77	0.78	0.76	0.76	0.78	0.80	0.81	0.79	0.74	0.88	0.77	0.79	0.80
Screen Line 7 Central Corridor - S																
Total	0.91	0.91	0.85	0.91	0.86	0.86	0.89	0.87	0.87	0.85	0.85	0.87	0.92	0.88	0.84	0.87
Screen Line 8 East Corridor - S																
I-495 NB	1.09	1.09	1.14	1.08	1.07	1.15	1.12	1.11	1.14	1.13	1.08	1.13	1.17	1.10	1.08	1.09
Other	1.24	1.26	1.25	1.25	1.25	1.26	1.26	1.25	1.28	1.24	1.27	1.27	1.21	1.24	1.14	1.24
Total	1.18	1.19	1.21	1.18	1.16	1.22	1.20	1.20	1.23	1.20	1.20	1.21	1.19	1.16	1.12	1.18
Screen Line 9 East Corridor - N																
I-495 NB	0.97	0.99	0.96	1.01	1.04	0.96	0.94	0.97	0.96	0.96	1.04	0.95	1.09	0.97	0.91	0.98
Other	1.28	1.29	1.32	1.31	1.31	1.28	1.28	1.30	1.31	1.31	1.31	1.30	1.25	1.29	1.12	1.29
Total	1.15	1.16	1.17	1.18	1.19	1.15	1.14	1.16	1.16	1.16	1.19	1.15	1.18	1.15	1.04	1.15
Screen Line 10 Central Corridor - N																
Total	1.12	1.10	1.04	1.13	1.05	1.05	1.06	1.07	1.06	1.04	1.06	1.06	1.11	1.06	0.97	1.07
Screen Line 11 West Corridor - N																
Total	0.79	0.79	0.73	0.83	0.77	0.76	0.77	0.78	0.73	0.73	0.80	0.75	0.68	0.76	0.59	0.78
Screen Line 12 Outer Corridor - N																
Total	0.77	0.78	0.76	0.77	0.78	0.76	0.77	0.78	0.76	0.76	0.77	0.76	0.75	0.78	0.67	0.78

Table 5-1
2020 Average Daily Vehicle Miles, Vehicle Hours, and Delay by Area

DRAFT

Area/Alternative	CLRP	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
Vehicle Miles:				SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SOV+HOV+ LRT	SOV+HOV+ Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super Bus	County Highway	Metro/G
East Corridor	4,894,000	4,913,000	4,916,000	5,184,000	5,124,000	5,217,000	4,922,000	4,914,000	4,906,000	5,079,000	5,148,000	5,228,000	4,904,000	5,492,000	4,930,000	4,964,000	4,913,000
Central Corridor	5,859,000	5,852,000	5,860,000	6,480,000	6,153,000	6,456,000	6,097,000	6,097,000	6,130,000	6,225,000	6,446,000	6,403,000	6,072,000	6,425,000	6,168,000	6,404,000	6,176,000
West Corridor	3,806,000	3,782,000	3,800,000	3,868,000	3,828,000	3,891,000	3,808,000	3,807,000	3,813,000	3,840,000	3,859,000	3,858,000	3,792,000	3,951,000	3,759,000	3,970,000	3,850,000
Outer Corridor	4,264,000	4,249,000	4,259,000	4,178,000	4,164,000	4,197,000	4,167,000	4,159,000	4,203,000	4,173,000	4,175,000	4,178,000	4,177,000	4,213,000	4,179,000	3,954,000	4,196,000
Total	18,833,000	18,796,000	18,835,000	19,710,000	19,269,000	19,761,000	18,994,000	18,977,000	19,052,000	19,317,000	19,628,000	19,667,000	18,945,000	20,081,000	19,036,000	19,292,000	19,135,000
Vehicle Hours:																	
East Corridor	174,700	175,800	177,100	178,200	173,100	177,500	175,900	176,000	177,500	175,400	176,700	178,300	174,000	183,100	180,900	172,400	176,300
Central Corridor	164,800	163,200	164,300	167,500	174,500	173,600	171,300	171,300	173,100	168,000	166,700	170,400	169,400	176,900	174,900	166,000	175,400
West Corridor	94,500	93,700	94,400	95,000	95,500	97,100	94,400	94,800	94,800	93,700	94,800	96,600	93,700	96,500	92,600	92,900	95,500
Outer Corridor	83,300	82,800	83,200	81,000	80,500	81,200	80,700	80,400	81,600	80,900	81,100	81,000	80,800	82,100	80,700	76,300	81,100
Total	517,300	515,500	519,000	521,700	523,600	529,400	522,300	522,300	527,000	518,000	519,300	526,300	517,900	538,600	529,100	509,600	528,300
Effective Speed:																	
East Corridor	28.0	27.9	27.8	29.1	29.6	29.4	28.0	27.9	27.6	29.0	29.1	29.3	28.2	30.0	27.3	28.8	27.9
Central Corridor	35.6	35.9	35.7	38.7	35.3	37.2	35.6	35.6	35.4	37.1	38.7	37.6	35.8	36.3	35.3	38.1	35.2
West Corridor	40.3	40.4	40.3	40.7	40.1	40.1	40.3	40.2	40.2	41.0	40.7	39.9	40.5	40.9	40.6	42.7	40.3
Outer Corridor	51.2	51.3	51.2	51.6	51.7	51.7	51.6	51.7	51.5	51.6	51.5	51.6	51.7	51.3	51.8	51.8	51.7
Total	36.4	36.5	36.3	37.8	36.8	37.3	36.4	36.3	36.2	37.3	37.8	37.4	36.6	37.3	36.0	37.9	38.2
Veh Hours of Delay																	
East Corridor	62,300	63,000	64,300	61,400	57,700	60,500	63,200	63,500	64,900	60,400	60,800	61,200	61,700	61,500	67,600	57,900	63,500
Central Corridor	35,300	34,100	35,100	31,800	39,900	37,800	37,500	37,400	38,900	32,500	31,700	35,700	36,100	37,900	39,400	30,000	40,100
West Corridor	13,200	12,800	13,200	12,600	13,700	14,000	12,800	13,100	13,300	11,900	12,600	14,100	12,500	12,700	12,400	9,700	13,300
Outer Corridor	7,600	7,400	7,600	7,000	6,600	6,700	6,700	6,700	7,000	6,900	7,000	6,800	6,700	7,400	6,500	6,300	6,700
Total	118,400	117,300	120,200	112,800	117,900	119,000	120,200	120,700	124,100	111,700	112,100	117,800	117,000	119,500	125,900	103,900	123,600

Table 5-2
2020 Average Daily Vehicle Miles, Vehicle Hours, and Delay by Area (continued)

DRAFT

Change from ENH	CLRP	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
				SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SOV+HOV+ LRT	SOV+HOV+ Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super Bus	County Highway	Metro/G
Vehicle Miles:																	
East Corridor	-	-	3,000	271,000	211,000	304,000	9,000	1,000	(7,000)	166,000	235,000	315,000	(9,000)	579,000	17,000	51,000	0
Central Corridor	-	-	8,000	628,000	301,000	604,000	245,000	245,000	278,000	373,000	594,000	551,000	220,000	573,000	316,000	552,000	324,000
West Corridor	-	-	16,000	86,000	46,000	109,000	26,000	25,000	31,000	58,000	77,000	76,000	10,000	169,000	(23,000)	188,000	98,000
Outer Corridor	-	-	10,000	(71,000)	(85,000)	(52,000)	(82,000)	(90,000)	(45,000)	(76,000)	(74,000)	(71,000)	(72,000)	(36,000)	(70,000)	(295,000)	(53,000)
Total	-	-	39,000	914,000	473,000	965,000	198,000	181,000	256,000	521,000	832,000	871,000	149,000	1,285,000	240,000	496,000	339,000
Vehicle Hours:																	
East Corridor	-	-	1,300	2,400	(2,700)	1,700	100	200	1,700	(400)	900	2,500	(1,800)	7,300	5,100	(3,400)	500
Central Corridor	-	-	1,100	4,300	11,300	10,400	8,100	8,100	9,900	4,800	3,500	7,200	6,200	13,700	11,700	4,800	12,200
West Corridor	-	-	700	1,300	1,800	3,400	700	900	1,100	0	1,100	2,900	0	2,800	(1,100)	(800)	1,800
Outer Corridor	-	-	400	(1,800)	(2,300)	(1,600)	(2,100)	(2,400)	(1,200)	(1,900)	(1,700)	(1,800)	(2,000)	(700)	(2,100)	(6,500)	(1,700)
Total	-	-	3,500	6,200	8,100	13,900	6,800	6,800	11,500	2,500	3,800	10,800	2,400	23,100	13,600	(5,900)	12,800
Effective Speed:																	
East Corridor	-	-	(0.19)	1.14	1.65	1.45	0.04	(0.03)	(0.31)	1.01	1.19	1.37	0.24	2.05	(0.69)	0.85	(0.09)
Central Corridor	-	-	(0.19)	2.83	(0.60)	1.33	(0.27)	(0.27)	(0.44)	1.20	2.81	1.72	(0.01)	0.46	(0.59)	2.26	(0.65)
West Corridor	-	-	(0.11)	0.35	(0.28)	(0.29)	(0.02)	(0.12)	(0.14)	0.62	0.34	(0.42)	0.11	0.58	0.23	2.37	(0.05)
Outer Corridor	-	-	(0.13)	0.26	0.41	0.37	0.32	0.41	0.19	0.27	0.16	0.26	0.38	(0.00)	0.47	0.51	0.42
Total	-	-	(0.17)	1.32	0.34	0.87	(0.10)	(0.13)	(0.31)	0.83	1.34	0.91	0.12	0.82	(0.48)	1.40	(0.24)
Veh Hours of Delay																	
East Corridor	-	-	1,300.00	(1,600.00)	(5,300.00)	(2,500.00)	200.00	500.00	1,900.00	(2,600.00)	(2,200.00)	(1,800.00)	(1,300.00)	(1,500.00)	4,600.00	(5,100.00)	500.00
Central Corridor	-	-	1,000.00	(2,300.00)	5,800.00	3,700.00	3,400.00	3,300.00	4,800.00	(1,600.00)	(2,400.00)	1,600.00	2,000.00	3,800.00	5,300.00	(4,100.00)	6,000.00
West Corridor	-	-	400.00	(200.00)	900.00	1,200.00	0.00	300.00	500.00	(900.00)	(200.00)	1,300.00	(300.00)	(100.00)	(400.00)	(3,100.00)	500.00
Outer Corridor	-	-	200.00	(400.00)	(800.00)	(700.00)	(700.00)	(700.00)	(400.00)	(500.00)	(400.00)	(600.00)	(700.00)	0.00	(900.00)	(1,100.00)	(700.00)
Total	-	-	2,900.00	(4,500.00)	600.00	1,700.00	2,900.00	3,400.00	6,800.00	(5,600.00)	(5,200.00)	500.00	(300.00)	2,200.00	8,600.00	(13,400.00)	6,300.00

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Table 6-1
2020 P.M. Peak Period Vehicle Miles, Vehicle Hours, and Delay by Area

DRAFT

Area/Alternative	CLRP	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SOV+HOV+ LRT	8 SOV+HOV+ Metro/C	9 SOV+LRT+ Metro/C	10 HOV+LRT+ Metro/C	11 Express/ Local	12 Super Bus	13 County Highway	14 Metro/G
Vehicle Miles:																	
East Corridor	1,267,000	1,272,000	1,276,000	1,369,000	1,325,000	1,364,000	1,300,000	1,297,000	1,269,000	1,342,000	1,366,000	1,365,000	1,297,000	1,440,000	1,285,000	1,298,000	1,266,000
Central Corridor	1,620,000	1,613,000	1,619,000	1,813,000	1,697,000	1,778,000	1,702,000	1,714,000	1,695,000	1,750,000	1,804,000	1,760,000	1,703,000	1,790,000	1,703,000	1,768,000	1,708,000
West Corridor	1,107,000	1,098,000	1,108,000	1,137,000	1,113,000	1,134,000	1,116,000	1,120,000	1,111,000	1,125,000	1,136,000	1,124,000	1,112,000	1,164,000	1,088,000	1,143,000	1,123,000
Outer Corridor	1,202,000	1,199,000	1,204,000	1,183,000	1,175,000	1,179,000	1,172,000	1,172,000	1,189,000	1,174,000	1,182,000	1,176,000	1,178,000	1,192,000	1,176,000	1,134,000	1,179,000
Total	5,196,000	5,182,000	5,207,000	5,502,000	5,310,000	5,455,000	5,290,000	5,303,000	5,264,000	5,391,000	5,488,000	5,425,000	5,290,000	5,586,000	5,282,000	5,343,000	5,276,000
Vehicle Hours:																	
East Corridor	76,100	76,200	77,600	77,300	73,200	76,700	78,400	77,900	76,400	75,900	76,700	77,400	76,900	78,700	79,800	74,000	76,100
Central Corridor	61,800	60,600	61,500	61,300	66,700	65,500	65,000	65,800	65,600	61,700	61,000	63,800	64,000	66,500	65,500	60,300	67,500
West Corridor	33,100	32,700	33,200	33,300	33,800	34,300	33,000	33,400	33,200	32,500	33,300	34,000	32,800	33,700	32,000	30,900	33,400
Outer Corridor	26,800	26,600	26,900	25,900	25,600	25,700	25,600	25,600	26,200	25,700	26,100	25,800	25,700	26,300	25,600	24,600	25,700
Total	197,800	196,100	199,200	197,800	199,300	202,200	202,000	202,700	201,400	195,800	197,100	201,000	199,400	205,200	202,900	189,800	202,700
Effective Speed:																	
East Corridor	16.6	16.7	16.4	17.7	18.1	17.8	16.6	16.6	16.6	17.7	17.8	17.6	16.9	18.3	16.1	17.5	16.6
Central Corridor	26.2	26.6	26.3	29.6	25.4	27.1	26.2	26.0	25.8	28.4	29.6	27.6	26.6	26.9	26.0	29.3	25.3
West Corridor	33.4	33.6	33.4	34.1	32.9	33.1	33.8	33.5	33.5	34.6	34.1	33.1	33.9	34.5	34.0	37.0	33.6
Outer Corridor	44.9	45.1	44.8	45.7	45.9	45.9	45.8	45.8	45.4	45.7	45.3	45.6	45.8	45.3	45.9	46.1	45.9
Total	26.3	26.4	26.1	27.8	26.6	27.0	26.2	26.2	26.1	27.5	27.8	27.0	26.5	27.2	25.9	28.2	26.0
Veh Hours of Delay																	
East Corridor	46,400	46,300	47,600	46,000	42,700	45,500	48,200	47,700	46,700	45,000	45,400	46,200	46,700	46,300	49,600	43,400	46,400
Central Corridor	25,100	24,200	24,900	22,800	28,700	27,200	27,100	27,500	27,700	23,000	22,600	25,900	25,900	27,200	27,200	21,300	29,300
West Corridor	9,200	9,000	9,200	8,900	9,800	9,800	8,900	9,200	9,200	8,300	9,000	9,700	8,700	8,800	8,600	6,600	9,200
Outer Corridor	5,400	5,200	5,400	4,900	4,600	4,700	4,700	4,700	5,000	4,800	5,000	4,800	4,700	5,100	4,600	4,400	4,700
Total	86,100	84,700	87,100	82,400	85,800	87,200	88,900	89,100	88,600	81,100	82,000	86,600	86,000	87,400	90,000	75,700	89,600

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Table 6-2
2020 P.M. Peak Period Vehicle Miles, Vehicle Hours, and Delay by Area (continued)

DRAFT

Change from ENH	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Vehicle Miles:	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SOV+HOV+ LRT	SOV+HOV+ Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super/ Bus	County Highway	Metro/G
East Corridor	97,000	53,000	92,000	28,000	25,000	(3,000)	70,000	84,000	93,000	25,000	168,000	13,000	26,000	(6,000)
Central Corridor	200,000	84,000	165,000	89,000	101,000	82,000	137,000	191,000	147,000	90,000	177,000	90,000	155,000	95,000
West Corridor	39,000	15,000	36,000	18,000	22,000	13,000	27,000	38,000	26,000	14,000	66,000	(10,000)	45,000	25,000
Outer Corridor	(18,000)	(24,000)	(20,000)	(27,000)	(27,000)	(10,000)	(25,000)	(17,000)	(23,000)	(21,000)	(7,000)	(23,000)	(65,000)	(20,000)
Total	320,000	128,000	273,000	108,000	121,000	82,000	209,000	306,000	243,000	108,000	404,000	70,000	161,000	94,000
Vehicle Hours:														
East Corridor	1,100	(3,000)	500	2,200	1,700	200	(300)	500	1,200	700	2,500	3,600	(2,200)	(100)
Central Corridor	700	6,100	4,900	4,400	5,200	5,900	1,100	400	3,200	3,400	5,900	4,900	(300)	6,900
West Corridor	600	1,100	1,600	300	700	500	(200)	600	1,300	100	1,000	(700)	(1,800)	700
Outer Corridor	(700)	(1,000)	(900)	(1,000)	(1,000)	(400)	(900)	(500)	(800)	(900)	(300)	(1,000)	(2,000)	(900)
Total	1,700	3,200	6,100	5,900	6,600	5,300	(300)	1,000	4,900	3,300	9,100	6,800	(6,300)	6,600
Effective Speed:														
East Corridor	1.02	1.41	1.09	(0.11)	(0.04)	(0.08)	0.99	1.12	0.94	0.17	1.60	(0.59)	0.85	(0.06)
Central Corridor	2.96	(1.17)	0.53	(0.43)	(0.57)	(0.78)	1.75	2.96	0.97	(0.01)	0.30	(0.62)	2.70	(1.31)
West Corridor	0.57	(0.65)	(0.52)	0.24	(0.05)	(0.11)	1.04	0.54	(0.52)	0.32	0.96	0.42	3.41	0.04
Outer Corridor	0.60	0.82	0.80	0.71	0.71	0.31	0.61	0.21	0.51	0.76	0.25	0.86	1.02	0.80
Total	1.39	0.22	0.55	(0.24)	(0.26)	(0.29)	1.11	1.42	0.56	0.10	0.80	(0.54)	1.73	(0.40)
Veh Hours of Delay														
East Corridor	(300.00)	(3,600.00)	(800.00)	1,900.00	1,400.00	400.00	(1,300.00)	(900.00)	(100.00)	400.00	0.00	3,300.00	(2,900.00)	100.00
Central Corridor	(1,600.00)	4,500.00	3,000.00	2,900.00	3,300.00	3,500.00	(1,200.00)	(1,600.00)	1,700.00	1,700.00	3,000.00	3,000.00	(2,900.00)	5,100.00
West Corridor	(100.00)	800.00	800.00	(100.00)	200.00	200.00	(700.00)	0.00	700.00	(300.00)	(200.00)	(400.00)	(2,400.00)	200.00
Outer Corridor	(300.00)	(600.00)	(500.00)	(500.00)	(500.00)	(200.00)	(400.00)	(200.00)	(400.00)	(500.00)	(100.00)	(600.00)	(800.00)	(500.00)
Total	(2,300.00)	1,100.00	2,500.00	4,200.00	4,400.00	3,900.00	(3,600.00)	(2,700.00)	1,900.00	1,300.00	2,700.00	5,300.00	(9,000.00)	4,900.00

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Table 7-1
Highway Occupancy Estimate from HBW Person Trip Tables

DRAFT

Screenline 1

	CLRP	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
SOV	178,200	176,900	176,900	177,100	176,600	178,900	170,400	172,200	175,700	172,300	176,400	177,500	171,100	183,200	175,700	179,200	177,000
HOV2	27,900	27,600	27,700	28,500	26,700	27,100	29,900	31,500	26,600	28,300	28,400	26,900	30,000	27,400	27,900	27,100	26,700
HOV3	28,500	28,100	28,100	32,500	26,300	27,300	33,000	34,500	26,400	32,500	32,300	27,300	33,100	25,600	28,600	27,000	26,400
Total PT	234,600	232,600	232,700	238,100	229,600	233,300	233,300	238,200	228,700	233,100	237,100	231,700	234,200	236,200	232,200	233,300	230,100
Total VT	200,300	198,700	199,800	200,600	197,500	200,300	194,800	197,800	195,500	195,700	199,900	198,800	195,600	204,200	197,800	200,500	197,900
Avg Occ	1.171	1.171	1.171	1.187	1.163	1.165	1.198	1.204	1.164	1.191	1.187	1.165	1.197	1.157	1.174	1.164	1.163

Screenline 2

	CLRP	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
SOV	172,200	170,300	170,200	172,400	169,600	172,500	162,900	163,700	167,800	165,300	170,700	171,100	163,000	177,800	165,800	173,000	169,300
HOV2	26,600	26,300	26,300	27,600	25,300	25,700	28,900	30,600	24,900	27,300	27,300	25,500	28,900	26,000	26,700	25,700	25,200
HOV3	26,300	25,800	25,900	30,500	23,900	25,000	31,000	32,300	24,100	30,500	30,300	25,000	31,000	23,600	26,300	24,900	24,100
Total PT	225,100	222,400	222,400	230,500	218,800	223,300	222,800	226,600	218,800	223,100	228,300	221,600	222,900	227,400	221,800	223,600	218,600
Total VT	193,000	190,800	190,800	194,900	189,100	192,600	186,200	188,200	187,100	187,700	193,000	191,000	186,300	197,500	189,700	193,000	188,800
Avg Occ	1.166	1.166	1.166	1.183	1.157	1.159	1.197	1.204	1.159	1.189	1.183	1.160	1.196	1.151	1.169	1.159	1.158

Screenline 3

	CLRP	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
SOV	91,100	90,200	90,100	89,900	90,600	91,300	86,000	86,300	90,300	87,600	89,700	91,000	86,100	93,900	89,400	91,700	90,700
HOV2	13,700	13,500	13,400	14,500	12,800	12,900	15,600	16,300	12,600	14,700	14,400	12,800	15,600	13,000	13,600	13,000	12,700
HOV3	11,000	10,800	10,800	13,400	9,600	10,000	14,000	14,300	9,700	13,300	13,000	10,200	14,100	9,600	11,000	10,300	9,600
Total PT	115,800	114,500	114,300	117,800	113,000	114,200	115,600	116,900	112,600	115,600	117,100	114,000	115,800	116,500	114,000	115,000	113,000
Total VT	101,100	100,000	99,900	101,000	99,700	100,600	97,800	98,500	99,400	98,800	100,600	100,300	97,900	103,100	99,300	101,100	99,800
Avg Occ	1.145	1.145	1.144	1.166	1.133	1.135	1.182	1.187	1.133	1.170	1.164	1.137	1.183	1.130	1.148	1.137	1.132

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Table 7-2
Highway Occupancy Estimate from Total Person Trip Tables

DRAFT

Screenline 1

	CLRP	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
SOV	572,800	573,800	573,500	574,600	577,900	577,600	567,400	568,500	572,200	570,700	572,800	576,800	566,400	585,400	573,800	576,200	573,100
HOV2	212,800	213,700	213,700	215,400	213,900	213,500	217,000	218,500	212,000	215,400	214,700	213,500	216,400	214,600	214,900	213,000	212,200
HOV3	135,700	135,900	135,800	141,100	134,400	135,100	142,000	143,100	133,300	141,300	140,500	134,900	141,400	133,200	137,100	134,600	133,500
Total PT	921,300	923,400	923,000	931,100	926,200	925,200	926,400	929,900	917,500	927,400	928,000	925,200	924,200	933,200	925,800	923,800	918,800
Total VT	718,000	719,500	719,200	722,600	723,300	723,000	716,500	718,400	716,300	718,800	720,300	722,100	715,000	730,800	720,400	721,200	717,300
Avg Occ	1,283	1,283	1,283	1,289	1,281	1,281	1,293	1,294	1,281	1,290	1,288	1,281	1,283	1,277	1,285	1,281	1,281

Screenline 2

	CLRP	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
SOV	546,800	546,900	546,500	556,800	550,700	557,700	539,700	539,400	544,600	543,500	554,100	557,000	538,500	560,300	546,100	549,900	545,500
HOV2	206,400	207,100	207,100	211,600	207,400	209,400	211,100	212,700	205,300	209,400	210,900	209,300	210,400	208,000	208,300	206,300	205,500
HOV3	129,100	129,200	129,200	135,800	127,600	129,400	135,600	136,600	126,700	135,100	135,300	129,400	135,200	127,100	130,300	127,900	126,900
Total PT	882,300	883,200	882,800	904,200	885,700	896,500	886,400	888,700	876,600	888,400	900,300	895,700	884,100	895,400	884,700	884,100	877,900
Total VT	686,900	687,400	687,000	701,400	690,900	699,400	684,000	684,800	683,500	687,200	698,200	698,600	682,300	700,600	687,500	689,600	684,500
Avg Occ	1,284	1,285	1,285	1,289	1,282	1,282	1,296	1,298	1,283	1,293	1,289	1,282	1,296	1,278	1,287	1,282	1,283

Screenline 3

	CLRP	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
SOV	266,800	266,500	266,200	267,300	268,000	268,900	261,200	261,700	267,200	264,000	266,900	269,400	261,400	272,600	264,800	268,100	266,900
HOV2	104,100	104,100	104,100	106,000	103,400	103,600	106,700	107,800	103,000	105,800	105,700	103,800	106,700	103,800	103,700	103,400	102,900
HOV3	63,500	63,500	63,400	66,800	62,000	62,700	67,400	67,800	61,900	66,600	66,400	62,800	67,300	62,000	63,500	62,800	61,600
Total PT	434,400	434,100	433,700	440,100	433,400	435,200	435,300	437,300	432,100	436,400	439,000	436,000	435,400	438,400	431,800	434,300	431,400
Total VT	337,000	336,700	336,400	339,400	337,400	338,600	333,800	335,000	335,400	335,900	338,700	339,200	334,000	342,200	334,600	337,700	336,000
Avg Occ	1,289	1,289	1,289	1,297	1,285	1,285	1,304	1,305	1,284	1,299	1,296	1,285	1,304	1,281	1,290	1,286	1,284

02-Dec-97

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Table 8-1
Major Transit Market Travel Summary

DRAFT

Market/Alt	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SOV+HOV+ LRT	SOV+HOV+ Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super Bus	County Highway	Metro/G
Total All-Bus Trips														
Intra-Corridor	13,800	5,400	9,000	5,400	9,300	7,700	5,400	9,300	7,600	7,600	13,500	16,800	14,100	9,000
Corridor to Core	2,200	1,100	1,300	1,100	1,400	1,200	1,200	1,400	1,200	1,200	2,200	2,500	2,300	1,300
Corridor to Other	9,700	5,700	7,200	5,600	7,300	6,500	5,600	7,300	6,500	6,500	9,700	10,400	9,800	7,200
Reverse Commute	4,700	3,700	4,100	3,600	4,200	4,100	3,700	4,200	4,100	4,100	4,700	4,900	4,800	4,100
Other to Corridor	3,400	2,100	2,900	2,200	2,900	2,500	2,200	2,900	2,400	2,500	3,400	4,000	3,500	2,900
Total Corridor-Related	33,800	18,000	24,500	17,900	25,100	22,000	18,100	25,100	21,800	21,800	33,500	38,600	34,500	24,500
Total Regional	263,300	247,200	254,800	246,400	254,800	251,000	247,200	254,400	251,600	250,400	263,100	269,500	264,400	254,400
Total Metro/LRT Trips														
Intra-Corridor	800	14,900	4,700	15,100	3,700	9,100	15,100	3,700	9,600	9,000	900	900	900	4,700
Corridor to Core	13,700	22,200	25,800	23,000	23,900	25,200	23,100	23,800	24,700	24,900	14,700	14,900	14,400	25,900
Corridor to Other	4,600	10,000	9,300	10,600	8,400	10,100	10,500	8,300	9,700	10,000	5,100	5,200	5,000	9,300
Reverse Commute	2,500	5,900	4,200	5,800	4,100	4,900	5,900	4,100	5,000	5,100	2,600	2,800	2,500	4,100
Other to Corridor	300	3,800	1,100	3,800	1,000	2,500	3,800	900	2,800	2,500	300	300	300	1,100
Total Corridor-Related	21,900	56,800	45,100	58,300	41,100	51,800	58,400	40,800	51,800	51,500	23,600	24,100	23,100	45,100
Total Regional	672,300	709,200	694,300	712,000	690,300	703,900	711,400	691,300	703,400	704,400	674,700	673,300	674,700	694,600
Total Comm Rail Trips														
Intra-Corridor	200	200	300	200	300	300	200	300	200	300	400	400	400	300
Corridor to Core	1,000	600	500	500	600	500	500	600	500	500	900	900	900	500
Corridor to Other	600	500	500	400	500	500	400	500	500	500	500	600	600	500
Reverse Commute	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Other to Corridor	300	200	300	300	300	300	300	300	300	300	300	400	300	300
Total Corridor-Related	2,200	1,600	1,700	1,500	1,800	1,700	1,500	1,800	1,600	1,700	2,200	2,400	2,300	1,700
Total Regional	31,700	30,900	31,100	30,500	31,100	30,600	30,600	31,100	30,800	30,500	31,600	31,900	32,000	31,000
Total Transit Trips														
Intra-Corridor	9,900	20,500	14,000	20,700	13,300	17,100	20,700	13,300	17,400	16,900	14,800	18,100	15,400	14,000
Corridor to Core	16,100	23,900	27,600	24,600	25,900	26,900	24,800	25,800	26,400	26,600	17,800	18,300	17,600	27,700
Corridor to Other	12,900	16,200	17,000	16,600	16,200	17,100	16,500	16,100	16,700	17,000	15,300	16,200	15,400	17,000
Reverse Commute	6,900	9,700	8,400	9,500	8,400	9,100	9,700	8,400	9,200	9,200	7,400	7,800	7,400	8,300
Other to Corridor	3,000	6,100	4,300	6,300	4,200	5,300	6,300	4,100	5,500	5,300	4,000	4,700	4,100	4,300
Total Corridor-Related	48,800	76,400	71,300	77,700	68,000	75,500	78,000	67,700	75,200	75,000	59,300	65,100	59,900	71,300
Change from CLRP	-	27,600	22,500	28,900	19,200	26,700	29,200	18,900	26,400	26,200	10,500	16,300	11,100	22,500
Change from Enhanced	-	16,900	11,800	18,200	8,500	16,000	18,500	8,200	15,700	15,500	(200)	5,600	400	11,800
Total Regional	958,800	987,300	980,200	988,900	976,200	985,500	989,200	976,800	985,800	985,300	969,400	974,700	971,100	980,000

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02-Dec-97

Table 8-2
Major Transit Market Travel Summary

DRAFT

Market/AT	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
	CLRP		SOV+ HOV	SOV+ LRT	SOV+ Metro/C	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SOV+HOV+ LRT	SOV+HOV+ Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super Bus	County Highway	Metro/C
HBW All-Bus Trips																
Intra-Corridor	2,300	3,900	3,700	1,300	2,100	1,300	2,400	1,900	1,300	2,400	1,800	1,800	3,800	4,800	3,900	2,200
Corridor to Core	1,200	2,000	2,000	1,000	1,100	1,000	1,200	1,000	1,000	1,200	1,000	1,000	2,000	2,100	2,100	1,100
Corridor to Other	3,900	5,100	5,000	2,800	3,400	2,700	3,500	3,000	2,700	3,500	3,100	3,100	5,000	5,400	5,000	3,400
Reverse Commute	1,800	1,900	1,900	1,400	1,700	1,400	1,600	1,600	1,400	1,700	1,600	1,600	1,900	2,000	1,900	1,700
Other to Corridor	1,100	1,600	1,600	900	1,300	1,000	1,300	1,100	1,000	1,300	1,100	1,100	1,600	1,800	1,600	1,300
Total Corridor-Related	10,300	14,500	14,200	7,400	9,600	7,400	10,100	8,600	7,400	10,100	8,600	8,600	14,300	16,100	14,500	9,700
Total Regional	124,000	128,600	127,300	120,400	123,600	119,800	123,300	121,800	120,500	123,100	122,500	121,200	127,400	130,300	128,100	123,200
HBW Metro/LRT Trips																
Intra-Corridor	300	300	300	7,100	2,500	7,300	1,800	5,100	7,300	1,800	5,200	4,900	300	300	300	2,500
Corridor to Core	10,500	10,800	11,400	17,500	21,300	18,300	19,600	20,500	18,300	19,500	20,000	20,200	11,100	11,100	10,900	21,400
Corridor to Other	3,800	4,000	4,300	7,800	7,800	8,300	7,000	8,200	8,300	7,000	8,000	8,200	4,200	4,200	4,100	7,800
Reverse Commute	1,200	1,200	1,200	2,700	2,000	2,700	2,000	2,400	2,700	2,000	2,400	2,500	1,100	1,200	1,100	2,000
Other to Corridor	200	200	200	2,700	800	2,700	700	1,800	2,600	700	2,000	1,900	200	200	200	800
Total Corridor-Related	16,000	16,500	17,400	37,800	34,400	39,300	31,100	38,000	39,200	31,000	37,600	37,700	16,900	17,000	16,800	34,500
Total Regional	418,300	418,700	420,500	441,000	435,500	443,800	431,800	441,000	443,200	432,500	440,400	441,400	420,100	418,600	419,800	435,600
HBW Comm Rail Trips																
Intra-Corridor	200	300	300	200	300	200	300	300	200	300	200	300	400	400	400	300
Corridor to Core	1,000	900	800	600	500	500	600	500	500	600	500	500	900	900	900	500
Corridor to Other	600	600	500	500	500	400	500	500	400	500	500	500	500	600	600	500
Reverse Commute	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Other to Corridor	300	300	300	200	300	300	300	300	300	300	300	300	300	400	300	300
Total Corridor-Related	2,200	2,200	2,000	1,600	1,700	1,500	1,800	1,700	1,500	1,800	1,600	1,700	2,200	2,400	2,300	1,700
Total Regional	26,800	26,900	26,600	26,000	26,200	25,700	26,200	25,700	25,800	26,200	25,900	25,600	26,700	27,000	27,100	26,100
HBW Total Transit Trips																
Intra-Corridor	2,800	4,500	4,300	8,600	4,900	8,800	4,500	7,300	8,800	4,500	7,200	7,000	4,500	5,500	4,600	5,000
Corridor to Core	12,700	13,700	14,200	19,100	22,900	19,800	21,400	22,000	19,800	21,300	21,500	21,700	14,000	14,100	13,900	23,000
Corridor to Other	8,300	9,700	9,800	11,100	11,700	11,400	11,000	11,700	11,400	11,000	11,600	11,800	9,700	10,200	9,700	11,700
Reverse Commute	3,100	3,200	3,200	4,200	3,800	4,200	3,800	4,100	4,200	3,800	4,100	4,200	3,100	3,300	3,100	3,800
Other to Corridor	1,600	2,100	2,100	3,800	2,400	4,000	2,300	3,200	3,900	2,300	3,400	3,300	2,100	2,400	2,100	2,400
Total Corridor-Related	28,500	33,500	33,600	46,800	45,700	48,200	43,000	48,300	48,100	42,900	47,800	48,000	33,400	35,500	33,400	45,900
Change from CLRP	-	4,700	5,100	18,300	17,200	19,700	14,500	19,800	19,600	14,400	19,300	19,500	4,900	7,000	4,900	17,400
Change from Enhanced	-	-	400	13,600	12,500	15,000	9,800	15,100	14,900	9,700	14,600	14,800	200	2,300	200	12,700
Total Regional	589,100	574,200	574,400	587,400	585,300	589,300	581,300	588,500	589,500	581,900	588,800	588,200	574,200	575,900	575,000	584,900

02-Dec-97

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Table 9-1
Major Transit Market Travel Summary

DRAFT

Market/Alt	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/G	LRT+ Metro/G	SOV+HOV+ LRT	SOV+HOV+ Metro/G	SOV+LRT+ Metro/G	HOV+LRT+ Metro/G	Express/ Local	Super/ Bus	County Highway	Metro/G
Total All-Bus Trips														
Intra-Corridor	1.1%	0.4%	0.7%	0.4%	0.7%	0.6%	0.4%	0.7%	0.6%	0.6%	1.0%	1.3%	1.1%	0.7%
Corridor to Core	3.1%	1.5%	1.7%	1.4%	1.8%	1.6%	1.6%	1.8%	1.6%	1.5%	3.2%	3.6%	3.3%	1.7%
Corridor to Other	1.4%	0.8%	1.0%	0.8%	1.0%	0.9%	0.8%	1.0%	0.9%	0.9%	1.3%	1.4%	1.4%	1.0%
Reverse Commute	1.5%	1.1%	1.3%	1.1%	1.3%	1.3%	1.1%	1.3%	1.3%	1.2%	1.5%	1.5%	1.5%	1.3%
Other to Corridor	0.7%	0.4%	0.6%	0.4%	0.6%	0.5%	0.4%	0.6%	0.5%	0.5%	0.7%	0.8%	0.7%	0.6%
Total Corridor-Related	1.2%	0.6%	0.8%	0.6%	0.9%	0.8%	0.6%	0.9%	0.7%	0.7%	1.1%	1.3%	1.2%	0.8%
Total Regional	1.2%	1.1%	1.2%	1.1%	1.2%	1.1%	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%	1.2%	1.1%
Total Metro/LRT Trips														
Intra-Corridor	0.1%	1.1%	0.4%	1.2%	0.3%	0.7%	1.2%	0.3%	0.7%	0.7%	0.1%	0.1%	0.1%	0.4%
Corridor to Core	21.2%	29.8%	33.0%	30.1%	30.5%	32.9%	30.1%	30.6%	32.1%	31.9%	21.1%	21.5%	20.9%	33.5%
Corridor to Other	0.7%	1.4%	1.3%	1.5%	1.2%	1.4%	1.5%	1.2%	1.4%	1.4%	0.7%	0.7%	0.7%	1.3%
Reverse Commute	0.8%	1.8%	1.3%	1.8%	1.3%	1.5%	1.8%	1.3%	1.5%	1.6%	0.8%	0.9%	0.8%	1.3%
Other to Corridor	0.1%	0.8%	0.2%	0.8%	0.2%	0.5%	0.8%	0.2%	0.6%	0.5%	0.1%	0.1%	0.1%	0.2%
Total Corridor-Related	0.8%	1.9%	1.5%	2.0%	1.4%	1.8%	2.0%	1.4%	1.8%	1.8%	0.8%	0.8%	0.8%	1.5%
Total Regional	3.0%	3.2%	3.1%	3.2%	3.1%	3.2%	3.2%	3.1%	3.2%	3.2%	3.0%	3.0%	3.0%	3.1%
Total Comm Rail Trips														
Intra-Corridor	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Corridor to Core	1.1%	0.8%	0.6%	0.7%	0.8%	0.7%	0.7%	0.8%	0.6%	0.6%	1.3%	1.3%	1.3%	0.6%
Corridor to Other	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Reverse Commute	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other to Corridor	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Total Corridor-Related	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Total Regional	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Total Transit Trips														
Intra-Corridor	0.8%	1.6%	1.1%	1.6%	1.0%	1.3%	1.6%	1.0%	1.3%	1.3%	1.1%	1.4%	1.2%	1.1%
Corridor to Core	23.9%	32.0%	35.3%	32.2%	33.1%	35.1%	32.3%	33.2%	34.3%	34.1%	25.5%	26.4%	25.8%	35.9%
Corridor to Other	1.8%	2.3%	2.4%	2.3%	2.3%	2.4%	2.3%	2.3%	2.3%	2.4%	2.1%	2.3%	2.1%	2.4%
Reverse Commute	2.2%	3.0%	2.6%	2.9%	2.6%	2.8%	3.0%	2.6%	2.8%	2.9%	2.3%	2.4%	2.3%	2.6%
Other to Corridor	0.6%	1.2%	0.9%	1.3%	0.8%	1.1%	1.3%	0.8%	1.1%	1.1%	0.8%	0.9%	0.8%	0.9%
Total Corridor-Related	1.7%	2.6%	2.4%	2.7%	2.3%	2.6%	2.7%	2.3%	2.6%	2.6%	2.0%	2.2%	2.0%	2.4%
Total Regional	4.3%	4.5%	4.4%	4.5%	4.4%	4.4%	4.5%	4.4%	4.5%	4.4%	4.4%	4.4%	4.4%	4.4%

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02-Dec-97

Table 9-2
Major Transit Market Travel Summary

DRAFT

Market/Alt	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/G	LRT+ Metro/C	SOV+HOV+ LRT	SOV+HOV+ Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super Bus	County Highway	Metro/G
HBW All-Bus M.S.														
Intra-Corridor	1.2%	2.1%	2.1%	0.7%	1.3%	1.0%	0.7%	1.3%	1.0%	1.0%	2.0%	2.6%	2.1%	1.2%
Corridor to Core	3.1%	5.0%	2.3%	2.1%	2.4%	2.1%	2.1%	2.5%	2.1%	2.0%	5.0%	5.3%	5.3%	2.3%
Corridor to Other	2.3%	2.9%	2.0%	1.6%	2.1%	1.8%	1.6%	2.1%	1.9%	1.9%	2.9%	3.2%	2.9%	2.1%
Reverse Commute	2.8%	3.0%	2.5%	2.1%	2.5%	2.4%	2.1%	2.5%	2.4%	2.4%	2.9%	3.1%	3.0%	2.6%
Other to Corridor	0.8%	1.2%	1.0%	0.7%	1.0%	0.8%	0.7%	1.0%	0.8%	0.8%	1.2%	1.3%	1.2%	1.0%
Total Corridor-Related	1.7%	2.4%	1.8%	1.2%	1.7%	1.4%	1.2%	1.7%	1.4%	1.4%	2.4%	2.7%	2.4%	1.6%
Total Regional	2.8%	2.9%	2.8%	2.7%	2.8%	2.7%	2.7%	2.8%	2.7%	2.7%	2.9%	2.9%	2.8%	2.8%
HBW Metro/LRT M.S.														
Intra-Corridor	0.2%	0.2%	1.4%	3.9%	1.0%	2.7%	4.0%	1.0%	2.8%	2.7%	0.2%	0.2%	0.2%	1.4%
Corridor to Core	26.9%	27.2%	43.7%	38.9%	39.9%	43.2%	38.8%	40.2%	42.0%	41.1%	27.8%	27.8%	27.5%	44.3%
Corridor to Other	2.2%	2.4%	4.7%	5.0%	4.2%	5.0%	5.0%	4.2%	4.8%	4.9%	2.5%	2.5%	2.4%	4.7%
Reverse Commute	1.9%	1.9%	3.0%	4.1%	2.9%	3.6%	4.1%	3.0%	3.6%	3.7%	1.7%	1.9%	1.7%	3.0%
Other to Corridor	0.1%	0.1%	0.6%	2.0%	0.5%	1.3%	1.9%	0.5%	1.5%	1.4%	0.1%	0.1%	0.1%	0.6%
Total Corridor-Related	2.7%	2.8%	5.7%	6.6%	5.2%	6.4%	6.6%	5.2%	6.3%	6.3%	2.8%	2.9%	2.8%	5.8%
Total Regional	9.4%	9.4%	9.8%	9.9%	9.7%	9.9%	9.9%	9.7%	9.9%	9.9%	9.4%	9.4%	9.4%	9.8%
HBW Comm Rail M.S.														
Intra-Corridor	0.1%	0.2%	0.2%	0.1%	0.2%	0.2%	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%
Corridor to Core	2.6%	2.3%	1.0%	1.1%	1.2%	1.1%	1.1%	1.2%	1.1%	1.0%	2.3%	2.3%	2.3%	1.0%
Corridor to Other	0.4%	0.4%	0.3%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.3%
Reverse Commute	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
Other to Corridor	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%
Total Corridor-Related	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.3%
Total Regional	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
HBW Total Transit M.S.														
Intra-Corridor	1.5%	2.4%	2.7%	4.8%	2.5%	3.9%	4.8%	2.5%	3.9%	3.8%	2.4%	2.9%	2.5%	2.7%
Corridor to Core	32.6%	34.5%	47.0%	42.0%	43.6%	46.3%	41.9%	43.9%	45.2%	44.2%	35.0%	35.3%	35.0%	47.6%
Corridor to Other	4.9%	5.7%	7.0%	6.9%	6.6%	7.1%	6.9%	6.6%	7.0%	7.1%	5.7%	6.0%	5.7%	7.1%
Reverse Commute	4.9%	5.0%	5.7%	6.4%	5.6%	6.2%	6.3%	5.6%	6.1%	6.3%	4.8%	5.1%	4.8%	5.7%
Other to Corridor	1.2%	1.6%	1.8%	3.0%	1.7%	2.4%	2.9%	1.7%	2.5%	2.5%	1.6%	1.8%	1.6%	1.8%
Total Corridor-Related	4.8%	5.6%	7.6%	8.1%	7.1%	8.1%	8.0%	7.1%	8.0%	8.0%	5.6%	6.0%	5.6%	7.7%
Total Regional	12.7%	12.9%	13.1%	13.2%	13.0%	13.2%	13.2%	13.0%	13.2%	13.2%	12.9%	12.9%	12.9%	13.1%

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Table 9-3
Major Transit Market Travel Summary

DRAFT

Market/Alt	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	SOV+ HOV	SOV+ LRT	SOV+ Metro/C	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	SOV+HOV+ LRT	SOV+HOV+ Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super Bus	County Highway	Metro/G
HBW Person Trips:														
Intra-Corridor	189,000	187,500	182,700	185,100	181,300	185,700	184,800	182,000	184,800	182,800	186,800	188,100	187,200	184,100
Corridor to Core	39,000	44,900	48,700	47,100	49,100	47,500	47,200	48,500	47,600	48,100	40,000	40,000	39,700	48,300
Corridor to Other	170,600	165,800	166,500	165,800	167,600	164,700	166,000	167,400	165,700	166,000	171,400	169,800	171,300	165,500
Reverse Commute	63,800	66,100	67,200	66,100	67,900	66,300	66,300	67,400	67,000	67,000	65,000	64,300	64,000	66,400
Other to Corridor	133,700	131,900	134,700	133,500	135,500	133,400	133,600	135,300	133,400	134,700	134,000	133,800	134,900	134,800
Total Corridor-Related	596,100	596,200	599,800	597,600	601,400	597,600	597,900	600,600	599,500	599,600	597,200	596,000	597,100	599,100
Change from CLRP	-	100	3,700	1,500	5,500	1,500	1,800	4,500	2,400	3,500	1,100	(100)	1,000	3,900
Change from Enhanced	-	300	3,900	1,700	5,500	1,700	2,000	4,700	2,600	3,700	1,300	100	1,200	3,200
Total Regional	4,466,300	4,465,900	4,465,400	4,465,900	4,465,400	4,465,500	4,465,700	4,465,400	4,465,600	4,465,600	4,465,900	4,465,700	4,465,900	4,465,400
Total Person Trips														
Intra-Corridor	1,319,700	1,310,700	1,306,700	1,306,800	1,307,300	1,312,300	1,305,700	1,309,800	1,311,100	1,308,900	1,308,400	1,310,200	1,309,000	1,308,600
Corridor to Core	67,300	74,600	78,100	76,500	78,300	76,600	76,800	77,800	77,000	78,100	69,700	69,200	68,800	77,200
Corridor to Other	714,100	714,300	713,600	715,600	712,700	709,300	716,300	710,600	710,900	711,200	721,700	719,400	722,200	712,600
Reverse Commute	318,100	324,700	324,400	322,900	324,000	321,100	323,900	323,200	324,100	322,100	323,200	321,200	319,100	320,900
Other to Corridor	497,500	497,300	502,100	502,800	500,500	499,400	503,100	498,800	497,800	500,700	501,700	502,200	506,500	503,000
Total Corridor-Related	2,914,700	2,921,600	2,924,900	2,924,600	2,922,800	2,918,700	2,925,800	2,921,200	2,920,900	2,921,000	2,924,700	2,922,200	2,925,600	2,922,300
Change from CLRP	-	6,900	10,200	9,900	8,100	4,000	11,100	6,500	6,200	6,300	10,000	7,500	10,900	7,600
Change from Enhanced	-	4,500	7,800	7,500	5,700	1,600	8,700	4,100	3,800	3,900	7,600	5,100	8,500	5,200
Total Regional	22,151,200	22,149,500	22,148,300	22,150,700	22,146,700	22,146,900	22,149,800	22,146,700	22,147,700	22,147,400	22,151,000	22,149,700	22,151,300	22,148,400

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Table 10
Estimated Person Trip Throughput at North-South Screenlines

DRAFT

	CLRP	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SHOV+ LRT	8 SIHOV+ Metro/C	9 SI/LRT+ Metro/C	10 H/LRT+ Metro/C	11 Expr/ Local	12 Super Bus	13 County Highway	14 Metro/G
Screenline 1																	
Highway Persons	1,093,900	1,099,900	1,097,200	1,141,800	1,134,400	1,145,500	1,113,400	1,112,800	1,097,500	1,130,100	1,134,400	1,144,000	1,105,300	1,169,800	1,104,700	1,116,200	1,100,300
Transit	53,700	59,300	59,800	60,700	72,400	75,700	74,400	72,800	77,100	74,700	72,500	77,200	76,800	60,200	65,900	60,000	75,700
Total Persons	1,147,600	1,159,200	1,157,000	1,202,500	1,206,800	1,221,200	1,187,800	1,185,600	1,174,600	1,204,800	1,206,900	1,221,200	1,182,100	1,230,000	1,170,600	1,176,200	1,176,000
Screenline 2																	
Highway Persons	551,500	551,700	552,800	622,500	578,800	618,000	560,900	560,400	549,300	584,700	617,400	614,700	557,000	604,000	555,500	561,700	550,900
Transit	13,800	18,600	18,800	19,100	38,900	38,600	41,200	35,600	41,100	41,500	35,700	41,200	40,700	18,300	21,600	18,500	38,600
Total Persons	565,300	570,300	571,600	641,600	617,700	656,600	602,100	596,000	590,400	626,200	653,100	655,900	597,700	622,300	577,100	580,200	589,500
Screenline 3																	
Highway Persons	524,900	521,600	523,600	553,700	522,800	542,300	533,500	531,500	525,100	540,300	548,500	537,000	528,700	545,600	528,800	537,800	528,200
Transit	2,900	5,600	5,700	5,700	12,800	10,800	17,100	4,600	16,600	17,000	4,600	16,500	16,400	5,500	8,200	5,700	11,000
Total Persons	527,800	527,200	529,300	559,400	535,600	553,100	550,600	536,100	541,700	557,300	553,100	553,500	545,100	551,100	537,000	603,500	539,200

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Table 11A
2020 Transit Travel Times

DRAFT

ORIGIN	DESTINATION	CLRP	Enhanced Base	VRE	1	2	3	4	5	Travel Time (Minutes) by Alternative										11	12	13	14
					SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	6	7	8	9	10	11	12	13	14					
										LRT+ Metro/C	SOV+HOV+ LRT	SOV+HOV+ Metro/C	SOV+LRT+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super Bus	County Highway	Metro/G					
Gainesville	Tyson's		65	65	52	77	64	70	68	74	71	68	75	68	61	70	62	64					
	Govt Center		41	41	33	41	33	35	38	44	35	38	44	38	38	43	39	33					
	Ferragut Sq		82	82	70	82	68	83	72	79	83	72	78	72	78	86	79	88					
Manassas	Tyson's	83	61	61	50	60	68	77	66	0	77	65	0	0	59	55	59	67					
	Govt Center	64	44	44	42	55	37	32	36	31	31	35	31	31	43	37	42	37					
	Ferragut Sq	72	72	72	61	73	69	61	61	65	61	61	65	61	69	72	71	73					
Centreville	Tyson's	70	61	61	54	60	47	66	46	47	66	47	47	47	62	51	61	47					
	Govt Center	20	27	27	27	28	16	27	16	16	27	16	16	16	27	21	28	16					
	Ferragut Sq	65	65	65	59	65	51	61	51	51	61	51	51	51	84	66	65	51					
Greenbriar	Tyson's	87	58	58	50	43	46	52	46	46	52	46	46	46	58	48	57	46					
	Govt Center	19	24	24	24	10	19	10	22	22	10	19	19	22	24	21	23	22					
	Ferragut Sq	62	62	62	55	48	50	48	50	50	48	50	50	50	61	62	62	50					
Fairfax City	Tyson's	55	53	53	54	55	55	55	55	54	55	55	55	55	53	48	55	54					
	Govt Center	35	26	26	27	28	28	28	28	28	28	28	28	28	28	28	26	28					
	Ferragut Sq	50	50	50	50	50	54	50	54	54	50	54	54	54	49	50	49	54					
Total Composite Travel Time		662	791	791	708	775	705	755	709	681	755	708	659	639	771	756	774	710					

* There is no local bus service from Gainesville in the 2020 CLRP base line

Table 11C
2020 HOV Travel Times

DRAFT

ORIGIN	DESTINATION	CLRP	Enhanced Base	VRE	Travel Time (Minutes) by Alternative										County Highway	Metro/C		
					1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/G	6 LRT+ Metro/C	7 SOV+HOV+ LRT	8 SOV+HOV+ Metro/C	9 SOV+LRT+ Metro/C	10 HOV+LRT+ Metro/C			11 Express/ Local	12 Super Bus
Gainesville	Tysons	50	50	50	40	33	48	38	39	52	39	40	48	39	48	50	48	52
	Govt Center	33	33	33	25	33	32	25	26	34	25	25	32	25	30	32	31	34
	Farragut Sq	63	63	63	51	63	60	52	51	64	51	51	60	52	58	62	61	64
Manassas	Tysons	44	44	44	34	45	41	34	33	46	34	34	41	34	43	43	43	46
	Govt Center	27	27	27	20	27	25	20	20	27	20	20	25	20	25	28	28	27
	Farragut Sq	57	57	57	46	57	54	46	46	58	46	46	54	46	53	56	55	58
Centreville	Tysons	32	32	32	26	33	30	27	26	33	26	26	30	27	32	31	32	33
	Govt Center	14	14	14	11	14	12	13	13	14	13	11	12	13	13	14	14	14
	Farragut Sq	45	45	45	38	45	43	40	39	46	39	38	43	40	41	44	45	46
Greenbriar	Tysons	33	33	33	28	33	29	28	27	34	27	26	29	28	34	33	33	34
	Govt Center	13	13	13	9	13	9	12	13	12	12	9	9	12	12	12	12	12
	Farragut Sq	46	46	46	37	46	41	41	39	46	40	37	41	41	44	45	45	46
Fairfax City	Tysons	21	21	21	20	21	21	19	19	22	19	20	21	19	23	22	21	22
	Govt Center	10	10	10	9	10	9	10	10	10	10	9	9	10	10	10	10	10
	Farragut Sq	34	34	34	32	34	34	32	31	34	31	32	34	32	33	34	34	34
Total Composite Travel Time					522	522	522	424	432	532	432	424	488	438	498	514	510	532

Note: Enhanced Base and VRE alternatives run with CLRP highway network

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**Table 12-1
HBW Trips - Rail Station Group Summary**

DRAFT

	CLRP	Enhanced Base	VRE	SOV+ HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
				SOV+ HOV	SOV+ LRT	SOV+ Metro/G	HOV+ LRT	HOV+ Metro/C	LRT+ Metro/C	LRT+ HOV+ LRT	SOV+HOV+ LRT	SOV+HOV+ Metro/C	HOV+LRT+ Metro/C	Express/ Local	Super Bus	County Highway	Metro/G
HBW/Metrolink/LRT Trips:																	
New Metrolink	-	-	-	-	-	2,300	-	1,600	1,100	-	-	1,100	1,100	-	-	-	2,400
New Metrolink - W Orange	-	-	-	-	-	4,400	-	3,900	2,800	-	-	2,900	2,800	-	-	-	4,400
New Metrolink - Other	-	-	-	-	-	21,500	-	19,100	14,500	-	-	18,900	14,300	-	-	-	21,900
North LRT	-	-	-	-	3,700	-	3,200	-	800	3,200	-	-	800	-	-	-	-
North LRT - New Metro	-	-	-	-	-	-	-	-	1,400	-	-	1,400	1,400	-	-	-	-
North LRT - W Orange	-	-	-	-	2,900	-	3,000	-	1,100	3,000	-	1,100	1,100	-	-	-	-
North LRT - Other	-	-	-	-	11,000	-	11,800	-	4,000	11,800	-	4,000	4,000	-	-	-	-
South LRT	-	-	-	-	4,600	-	5,400	-	500	5,400	-	500	500	-	-	-	-
South LRT - New Metro	-	-	-	-	-	-	-	-	1,100	-	-	1,100	1,100	-	-	-	-
South LRT - W Orange	-	-	-	-	3,000	-	3,300	-	1,200	3,300	-	1,200	1,300	-	-	-	-
South LRT - Other	-	-	-	-	9,300	-	10,800	-	5,100	10,800	-	4,900	4,800	-	-	-	-
North LRT - South LRT	-	-	-	-	600	-	500	-	1,200	500	-	1,100	1,100	-	-	-	-
W Orange - W Orange	6,100	6,300	6,300	6,400	4,800	5,000	4,700	5,000	4,900	4,600	5,100	4,900	4,900	6,400	6,300	6,300	5,000
W Orange - Other	69,900	70,200	70,000	71,200	61,500	63,000	61,200	62,700	62,000	61,500	63,300	62,500	62,500	71,100	70,700	70,700	62,500
Other	342,300	342,200	341,900	342,800	339,700	339,300	340,000	339,800	339,200	339,200	340,000	339,000	339,800	342,700	341,500	342,800	339,400
Total New MR-Related	-	-	-	-	-	28,200	-	24,600	20,900	-	-	20,800	20,700	-	-	-	28,700
Total N LRT-Related	-	-	-	-	18,200	-	18,500	-	8,500	18,500	-	8,400	8,400	-	-	-	-
Total S LRT-Related	-	-	-	-	17,500	-	20,000	-	9,100	20,000	-	8,800	8,800	-	-	-	-
Total LRT-Related	-	-	-	-	35,100	-	38,000	-	16,400	38,000	-	16,100	16,100	-	-	-	-
Total New-Related	-	-	-	-	35,100	28,200	38,000	24,600	34,600	38,000	24,400	34,400	34,300	-	-	-	28,700
Total LRT-Metrolink	-	-	-	-	28,200	-	28,900	-	13,900	28,900	-	13,700	13,700	-	-	-	-
Total W Orange	76,000	76,500	76,300	77,600	72,200	72,400	72,200	71,600	72,000	72,400	72,300	72,600	72,600	77,500	77,000	77,000	71,900
Total New+W Orange	76,000	76,500	76,300	77,600	101,400	96,200	103,900	92,300	101,700	104,100	92,800	101,900	101,700	77,500	77,000	77,000	96,200
Total Regional Rail Trips	418,300	418,700	418,200	420,400	441,100	435,500	443,900	431,900	440,900	443,300	432,800	440,800	441,500	420,200	418,500	419,800	435,600

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Table 12-2
Total Trips - Rail Station Group Summary

DRAFT

	CLRP	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/G	4 HOV+ LRT	5 HOV+ Metro/G	6 LRT+ Metro/G	7 SOV+HOV+ LRT	8 SOV+HOV+ Metro/G	9 SOV+LRT+ Metro/G	10 HOV+LRT+ Metro/G	11 Express/ Local	12 Super Bus	13 County Highway	14 Metro/G
Total Metrolink/LRT Trips:																	
New Metrolink	-	-	-	-	-	4,200	-	3,200	2,300	-	3,200	2,300	2,300	-	-	-	4,300
New Metrolink - W Orange	-	-	-	-	-	6,000	-	5,500	4,100	-	5,400	4,200	4,100	-	-	-	6,000
New Metrolink - Other	-	-	-	-	-	27,800	-	24,900	18,300	-	24,600	18,200	18,200	-	-	-	28,200
North LRT	-	-	-	-	6,800	-	6,300	-	1,400	6,300	-	1,400	1,400	-	-	-	-
North LRT - New Metro	-	-	-	-	-	-	-	-	2,400	-	-	2,500	2,400	-	-	-	-
North LRT - W Orange	-	-	-	-	4,000	-	4,000	-	1,300	4,000	-	1,400	1,400	-	-	-	-
North LRT - Other	-	-	-	-	15,600	-	16,500	-	6,200	16,500	-	6,200	6,100	-	-	-	-
South LRT	-	-	-	-	8,900	-	9,800	-	1,100	9,800	-	1,100	1,100	-	-	-	-
South LRT - New Metro	-	-	-	-	-	-	-	-	1,400	-	-	1,400	1,400	-	-	-	-
South LRT - W Orange	-	-	-	-	4,900	-	5,200	-	1,500	5,200	-	1,500	1,500	-	-	-	-
South LRT - Other	-	-	-	-	13,000	-	14,700	-	6,700	14,700	-	6,500	6,300	-	-	-	-
North LRT - South LRT	-	-	-	-	1,000	-	1,000	-	1,500	1,000	-	1,500	1,500	-	-	-	-
W Orange - W Orange	10,300	10,600	10,500	10,700	8,400	8,800	8,300	8,900	8,700	8,300	8,900	8,700	8,700	10,700	10,700	10,500	8,800
W Orange - Other	100,500	101,400	101,300	102,500	88,100	89,900	87,900	89,800	88,900	88,100	90,300	89,300	89,400	102,400	102,300	102,000	89,500
Other	561,600	561,500	561,000	561,900	558,300	557,600	558,500	558,300	558,100	557,700	558,900	557,600	558,700	561,700	560,400	562,200	558,000
Total New MR-Related	-	-	-	-	-	38,000	-	33,600	28,500	-	33,200	28,600	28,400	-	-	-	38,500
Total N LRT-Related	-	-	-	-	27,400	-	27,800	-	12,800	27,800	-	13,000	12,800	-	-	-	-
Total S LRT-Related	-	-	-	-	27,800	-	30,700	-	12,200	30,700	-	12,000	11,800	-	-	-	-
Total LRT-Related	-	-	-	-	54,200	-	57,500	-	25,000	57,500	-	25,000	23,100	-	-	-	-
Total New-Related	-	-	-	-	54,200	38,000	57,500	33,600	48,200	57,500	33,200	48,200	47,700	-	-	-	38,500
Total LRT-Metrolink	-	-	-	-	37,500	-	40,400	-	19,500	40,400	-	19,500	19,100	-	-	-	-
Total W Orange	110,800	112,000	111,800	113,200	105,400	104,700	105,400	104,200	104,500	105,600	104,600	105,100	105,100	113,100	113,000	112,600	104,300
Total New+W Orange	110,800	112,000	111,800	113,200	150,700	136,700	153,700	132,300	145,800	153,900	132,400	146,200	145,800	113,100	113,000	112,600	136,800
Total Regional Rail Trips	672,400	673,500	672,800	675,100	709,000	694,300	712,200	690,600	703,900	711,600	691,300	703,800	704,500	674,800	673,400	674,800	694,800

	Alt 104			Alt 105			Alt 106			Alt 107			Alt 108			Alt 109		
	Peak Veh	Daily VH	Daily VM	Peak Veh	Daily VH	Daily VM	Peak Veh	Daily VH	Daily VM	Peak Veh	Daily VH	Daily VM	Peak Veh	Daily VH	Daily VM	Peak Veh	Daily VH	Daily VM
Meirobus Local	15.0	102.0	2,831.2	17.5	114.5	3,041.3	17.5	114.5	3,041.3	15.0	102.0	2,831.2	17.5	114.5	3,041.3	18.0	117.0	3,041.3
Meirobus Express	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City/County Local	42.5	325.0	9,962.1	38.5	309.5	9,334.7	39.5	314.5	9,334.7	41.5	320.0	9,962.1	36.5	290.5	9,334.7	37.0	293.0	9,333.2
City/County Express	9.5	56.5	1,893.2	9.0	54.0	1,609.5	10.0	59.0	1,609.5	9.0	54.0	1,893.2	8.5	51.5	1,609.5	9.0	54.0	1,608.7
Outer Local	7.0	62.0	2,140.8	10.0	77.0	2,575.6	7.0	53.0	1,722.9	6.5	59.5	2,140.8	10.0	77.0	2,575.6	7.0	53.0	1,722.9
Outer Express	4.5	22.5	891.4	4.0	20.0	775.3	5.0	25.0	790.8	4.5	22.5	891.4	4.0	20.0	775.3	5.0	25.0	790.8
Total	78.5	568.0	17,718.8	79.0	575.0	17,336.5	79.0	568.0	16,499.2	76.5	558.0	17,718.8	76.5	553.5	17,336.5	78.0	542.0	16,494.9

Note: Routes providing only marginal service in the corridor have been eliminated

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Summary of Bus Operating Statistics

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
		SOV+	SOV+	SOV+	HOV+	HOV+	LRT+SOV+HOV	V+HOV+SOV+LRT	SOV+LRT	HOV+LRT	HOV+LRT	Express/Local	Super Bus	County Highway	Metro/G
		VRE	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Peak Buses	55	87	87	81	79	79	79	77	77	76	77	82	137	84	81
Daily VHT	400	610	610	580	570	580	570	580	550	540	560	590	950	600	580
Daily VMT	11,500	18,100	18,100	17,800	17,200	17,300	16,500	17,700	17,300	16,500	16,500	16,100	30,100	18,100	17,100

04-Dec-97

TABLE 5.18X

[illegible]

NOTE: The values in this table only include trips with an origin or destination in the I-66 Corridor Study Area

TABLE SNX
2020 DAILY PERSON TRIPS (LINKED) BY MODE IN NORTHERN VIRGINIA

MODE	NUMBER OF HOME BASED WORK PERSON TRIPS BY ALTERNATIVE													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Bus Only	CLRP	SOV+	SOV+	HOV+	HOV+	LRT+	SOV+HOV+	SOV+HOV+	SOV+LRT+	HOV+LRT+	Express	Super	County	Metro/C
Bus Only	111,800	121,100	111,900	104,300	112,200	108,500	104,700	112,300	108,500	108,300	120,900	126,400	122,200	111,800
Rail	Enhanced	VRB	VRB	VRB	VRB	VRB	VRB	VRB	VRB	VRB	VRB	VRB	VRB	VRB
Rail	274,200	276,200	276,200	276,200	276,200	276,200	276,200	276,200	276,200	276,200	276,200	276,200	276,200	276,200
SUBTOTAL TRANSIT	386,000	397,400	409,500	417,900	405,500	414,600	418,200	405,300	415,000	414,100	397,700	402,900	398,100	409,400
SOV	5,965,900	5,931,200	5,958,500	5,937,400	5,939,300	5,931,300	5,935,200	5,951,800	5,932,500	5,937,100	5,972,700	5,954,800	5,958,900	5,957,000
HOV-2	2,026,500	2,035,200	2,030,800	2,033,700	2,030,900	2,022,400	2,029,600	2,028,300	2,024,700	2,028,300	2,032,200	2,030,100	2,029,500	2,028,600
HOV-3+	1,129,200	1,124,000	1,129,500	1,134,700	1,134,600	1,121,500	1,138,600	1,132,200	1,125,500	1,130,500	1,121,500	1,131,900	1,134,300	1,125,800
SUBTOTAL ROADWAY	9,121,600	9,098,200	9,118,800	9,105,800	9,104,800	9,095,200	9,103,400	9,112,300	9,102,700	9,095,900	9,126,400	9,116,800	9,122,700	9,111,400
WALK/BIKE/TAXI	763,600	760,200	750,300	756,900	761,000	761,000	756,700	753,400	753,200	760,800	756,900	758,000	757,000	758,000
TOTAL PERSON TRIPS	10,271,200	10,274,400	10,278,600	10,280,600	10,271,300	10,270,800	10,278,300	10,271,000	10,270,900	10,270,800	10,281,000	10,277,700	10,277,800	10,278,800
CHANGE FROM														
ENHANCED BASELINE														
Total Transit	-	18,400	11,900	20,300	7,900	17,000	20,600	7,700	17,400	16,500	100	5,300	500	11,800
Total Roadway	-	(13,000)	7,600	(5,400)	(6,400)	(16,000)	(7,800)	1,100	(8,500)	(15,300)	15,200	5,600	11,500	200
Total Person	-	3,200	7,400	9,400	100	(400)	7,100	(200)	(100)	(400)	9,800	6,500	6,600	7,600
% CHANGE FROM														
ENHANCED BASELINE														
Total Transit	-	4.6%	3.0%	5.1%	2.0%	4.3%	5.2%	1.9%	4.4%	4.1%	0.0%	1.3%	0.1%	3.0%
Total Roadway	-	-0.1%	0.1%	-0.1%	-0.1%	-0.2%	-0.1%	0.0%	-0.1%	-0.2%	0.2%	0.1%	0.1%	0.0%
Total Person	-	0.0%	0.1%	0.1%	0.0%	-0.0%	0.1%	-0.0%	-0.0%	-0.0%	0.1%	0.1%	0.1%	0.1%

NOTE: The values in this table only include trips with an origin or destination in Northern Virginia

TABLE 11X
BOARDING SUMMARY FOR METROLINK AND PROPOSED RAIL STATIONS - 2020 TOTAL DAILY TRIPS

Proposed Rail Stations	CLRT	Enhanced Base	VRIS	SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/C	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SOV+HOV+ LRT	8 SOV+HOV+ Metro/C	9 SOV+LRT+ Metro/C	10 HOV+LRT+ Metro/C	11 Express Local	12 Super Bus	13 County Highway	14 Metro/C
Fairfax City	-	-	-	-	1,500	3,300	1,600	3,300	3,400	1,600	3,200	3,400	3,400	-	-	-	3,300
Fair Oaks	-	-	-	-	2,800	5,000	2,900	4,700	4,900	2,900	4,700	5,000	4,900	-	-	-	5,000
Stringfellow	-	-	-	-	-	2,500	-	2,500	2,600	-	2,500	2,600	2,600	-	-	-	2,500
Centerville	-	-	-	-	-	5,900	-	7,300	4,400	-	7,200	4,400	4,400	-	-	-	5,900
Manassas	-	-	-	-	-	1,500	-	1,500	-	-	-	-	-	-	-	-	1,500
Gainesville	-	-	-	-	-	2,400	-	-	-	-	-	-	-	-	-	-	2,400
Fair Lakes East	-	-	-	-	900	-	800	-	-	800	-	-	-	-	-	-	-
Fair Lakes North	-	-	-	-	2,400	-	2,400	-	-	2,400	-	-	-	-	-	-	-
Greenbrier	-	-	-	-	1,400	-	1,400	-	-	1,500	-	-	-	-	-	-	-
Chantilly East	-	-	-	-	1,100	-	1,000	-	-	1,000	-	-	-	-	-	-	-
Chantilly West	-	-	-	-	1,100	-	900	-	-	900	-	-	900	-	-	-	-
Smiltsontown	-	-	-	-	400	-	400	-	-	400	-	-	200	-	-	-	-
McLaren	-	-	-	-	1,500	-	1,300	-	-	1,300	-	-	100	-	-	-	-
Dulles Corner	-	-	-	-	2,000	-	2,700	-	-	2,700	-	-	800	-	-	-	-
Dulles	-	-	-	-	400	-	700	-	-	700	-	-	2,200	-	-	-	-
Fairfax Circle	-	-	-	-	2,000	-	2,000	-	-	2,000	-	-	500	-	-	-	-
Fairfax	-	-	-	-	2,100	-	1,600	-	-	2,100	-	-	-	-	-	-	-
Kamp Washington	-	-	-	-	1,400	-	1,500	-	-	1,500	-	-	-	-	-	-	-
Govt Center	-	-	-	-	800	-	800	-	-	800	-	-	-	-	-	-	-
Fairfax Pkwy	-	-	-	-	1,300	-	1,200	-	-	1,200	-	-	-	-	-	-	-
Little Rocky Run	-	-	-	-	1,000	-	1,000	-	-	1,000	-	-	-	-	-	-	-
Centerville Rd	-	-	-	-	1,100	-	1,400	-	-	1,400	-	-	-	-	-	-	-
New Braddock	-	-	-	-	1,000	-	1,300	-	-	1,300	-	-	-	-	-	-	-
Compton	-	-	-	-	500	-	200	-	-	300	-	-	-	-	-	-	-
Yorkshire	-	-	-	-	500	-	600	-	-	600	-	-	-	-	-	-	-
Manassas Park	-	-	-	-	400	-	500	-	-	500	-	-	-	-	-	-	-
Manassas Park VRE	-	-	-	-	2,200	-	3,000	-	-	3,000	-	-	-	-	-	-	-
Manassas VRE	-	-	-	-	1,700	-	1,700	-	-	1,600	-	-	1,700	-	-	-	-
Willard	-	-	-	-	1,200	-	1,300	-	-	1,300	-	-	1,100	-	-	-	-
Sequoia Farms	-	-	-	-	500	-	400	-	-	400	-	-	-	-	-	-	-
Braddock	-	-	-	-	1,000	-	1,000	-	-	1,000	-	-	-	-	-	-	-
Lee Hwy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sully Park	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bull Run Park	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lomond	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sudley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ashion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Godwin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manassas Apt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal South Alignment	-	-	-	-	17,500	-	18,800	-	6,500	18,700	-	6,400	6,300	-	-	-	-
Subtotal North Alignment	-	-	-	-	18,300	-	19,100	-	22,800	19,000	-	22,800	22,600	-	-	-	20,800
Existing Metrolink Stations	-	-	-	-	-	20,600	-	17,800	-	-	17,700	-	-	-	-	-	-
Vienna	9,300	9,900	9,900	10,600	5,400	5,200	5,000	5,100	4,900	5,000	5,200	5,200	5,100	10,300	10,600	10,000	5,000
Dunn Loring	4,400	4,400	4,400	4,400	4,500	4,800	4,500	4,700	4,800	4,600	4,700	4,900	4,800	4,500	4,300	4,500	4,700
West Falls Church	9,200	9,200	9,200	9,000	8,700	8,900	8,700	8,800	8,500	8,700	8,800	8,600	8,600	9,000	9,000	9,100	8,800
Subtotal	22,900	23,500	23,500	24,000	18,600	18,900	18,200	18,600	18,200	18,200	18,200	18,700	18,500	23,800	23,900	23,600	18,500
TOTAL	22,900	23,500	23,500	24,000	54,400	39,500	56,100	36,400	47,500	56,000	36,400	47,900	47,400	23,800	23,900	23,600	39,300

Note: Data reflects daily boardings or alightings; does not include transfers

02-Dec-97

KPMG

BOARDING SUMMARY FOR METROLINK AND PROPOSED RAIL STATIONS - 2020 DAILY HOME BASED WORK TRIPS

Proposed Rail Stations	CLRP	Enhanced Base	VRE	SOV+HOV	2	3	4	5	6	7	8	9	10	11	12	13	14
				SOV+HOV	SOV+HOV LRT	SOV+HOV Metro/C	HOV+HOV LRT	HOV+HOV Metro/C	LRT+HOV+HOV Metro/C	SOV+HOV+HOV LRT	SOV+HOV+HOV Metro/C	SOV+HOV+HOV Metro/C	HOV+HOV+HOV Metro/C	Express/Local	Super/Bus	County Highway	Metro/C
Fairfax City	-	-	-	-	1,000	2,300	1,100	2,300	2,400	1,100	2,200	2,300	2,300	-	-	-	2,300
Fairfax City	-	-	-	-	1,900	3,400	1,900	3,100	3,400	1,900	3,200	3,400	3,400	-	-	-	3,400
Springfield	-	-	-	-	-	1,700	-	1,700	1,800	-	1,700	1,800	1,800	-	-	-	1,800
Centerville	-	-	-	-	-	4,500	-	5,700	3,500	-	5,600	3,500	3,500	-	-	-	4,600
Manassas	-	-	-	-	-	1,200	-	1,200	-	-	-	-	-	-	-	-	1,200
Manassas	-	-	-	-	-	2,000	-	2,000	-	-	-	-	-	-	-	-	2,000
Gainesville	-	-	-	-	500	-	400	-	-	500	-	-	-	-	-	-	-
Fair Lakes East	-	-	-	-	1,400	-	1,400	-	-	1,400	-	-	-	-	-	-	-
Fair Lakes North	-	-	-	-	800	-	800	-	-	800	-	-	-	-	-	-	-
Greenbrier	-	-	-	-	600	-	600	-	-	600	-	-	-	-	-	-	-
Chantilly East	-	-	-	-	600	-	500	-	500	500	-	600	500	-	-	-	-
Chantilly West	-	-	-	-	300	-	300	-	200	300	-	100	200	-	-	-	-
Smithsonian	-	-	-	-	900	-	700	-	700	700	-	500	500	-	-	-	-
McLean	-	-	-	-	1,300	-	1,900	-	1,600	1,900	-	1,600	1,600	-	-	-	-
Dulles Corner	-	-	-	-	100	-	300	-	200	300	-	200	200	-	-	-	-
Dulles	-	-	-	-	1,300	-	1,300	-	-	1,300	-	-	-	-	-	-	-
Fairfax Circle	-	-	-	-	1,100	-	1,200	-	-	1,100	-	-	-	-	-	-	-
Fairfax	-	-	-	-	800	-	900	-	900	900	-	-	-	-	-	-	-
Kamp Washington	-	-	-	-	800	-	900	-	900	900	-	-	-	-	-	-	-
Govt Center	-	-	-	-	600	-	600	-	500	500	-	-	-	-	-	-	-
Fairfax Pkwy	-	-	-	-	800	-	700	-	700	700	-	-	-	-	-	-	-
Little Rocky Run	-	-	-	-	700	-	600	-	600	600	-	-	-	-	-	-	-
Centerville Rd	-	-	-	-	700	-	800	-	700	700	-	-	-	-	-	-	-
New Braddock	-	-	-	-	500	-	800	-	800	800	-	-	-	-	-	-	-
Compton	-	-	-	-	300	-	200	-	200	200	-	-	-	-	-	-	-
Yorkshire	-	-	-	-	200	-	400	-	400	400	-	-	-	-	-	-	-
Manassas Park	-	-	-	-	200	-	300	-	300	300	-	-	-	-	-	-	-
Manassas Park VRE	-	-	-	-	1,700	-	2,500	-	2,400	2,400	-	-	-	-	-	-	-
Manassas VRE	-	-	-	-	1,100	-	1,000	-	1,000	1,000	-	1,000	1,000	-	-	-	-
Willard	-	-	-	-	700	-	700	-	600	600	-	600	600	-	-	-	-
Sequoia Farms	-	-	-	-	300	-	500	-	300	300	-	-	-	-	-	-	-
Braddock	-	-	-	-	600	-	500	-	600	600	-	-	-	-	-	-	-
Lee Hwy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sully Park	-	-	-	-	-	-	-	-	100	-	-	100	100	-	-	-	-
Bull Run Park	-	-	-	-	-	-	-	-	1,100	-	-	1,100	1,100	-	-	-	-
Lomond	-	-	-	-	-	-	-	-	700	-	-	600	600	-	-	-	-
Sudley	-	-	-	-	-	-	-	-	300	-	-	300	300	-	-	-	-
Ashton	-	-	-	-	-	-	-	-	300	-	-	300	300	-	-	-	-
Loral	-	-	-	-	-	-	-	-	1,200	-	-	1,200	1,200	-	-	-	-
Godwin	-	-	-	-	-	-	-	-	400	-	-	400	400	-	-	-	-
Manassas Art	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal South Alignment	-	-	-	-	10,700	15,000	12,800	12,800	4,800	11,900	-	4,600	4,600	-	-	-	15,300
Subtotal North Alignment	-	-	-	-	11,300	11,800	11,800	11,800	15,700	11,700	12,700	15,600	15,500	-	-	-	-
Existing Metrolink Stations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vienna	6,700	7,000	7,000	7,600	3,800	3,700	3,400	3,600	3,500	3,500	3,700	3,700	3,700	7,300	7,300	7,000	3,500
Dunn Loring	3,000	2,900	2,900	2,900	3,000	3,300	3,000	3,300	3,400	3,100	3,300	3,400	3,300	3,100	2,900	3,000	3,300
West Falls Church	7,100	7,100	7,100	6,900	6,700	6,800	6,700	6,700	6,500	6,600	6,700	6,600	6,600	6,900	7,000	6,900	6,700
Subtotal	16,800	17,000	17,000	17,400	13,500	13,800	13,100	13,600	13,400	13,200	13,700	13,700	13,600	17,300	17,200	16,900	13,500
TOTAL	16,800	17,000	17,000	17,400	35,500	28,800	26,900	26,400	33,900	36,800	26,400	33,900	33,700	17,300	17,200	16,900	28,800

Note: Data reflects daily boardings or alightings; does not include transfers

01-Dec-97

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TABLE 12
RIDERHIP SUMMARY FOR PROPOSED RAIL LINES - 2020 TOTAL DAILY TRIPS

	CLRP	Enhanced Base	VRE	1 SOV+ HOV	2 SOV+ LRT	3 SOV+ Metro/C	4 HOV+ LRT	5 HOV+ Metro/C	6 LRT+ Metro/C	7 SOV+HOV+ LRT	8 SOV+HOV+ Metro/C	9 SOV+LRT+ Metro/C	10 HOV+LRT+ Metro/C	11 Express/ Local	12 Super Bus	13 County Highway	14 Metro/C
South Alignment	-	-	-	-	22,100	-	23,100	-	-	23,100	-	-	-	-	-	-	-
North Alignment	-	-	-	-	38,400	18,100	41,700	33,500	48,700	41,700	33,300	48,500	48,100	-	-	-	38,400
Subtotal	-	-	-	-	60,500	38,100	64,800	33,500	48,700	64,800	33,300	48,500	48,100	-	-	-	38,400
Transfers	-	-	-	-	5,800	-	6,800	-	-	6,800	-	-	-	-	-	-	-
Total less Transfers	-	-	-	-	54,700	38,100	58,000	33,500	48,700	58,000	33,300	48,500	48,100	-	-	-	38,400

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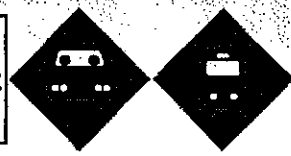
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RIDERHIP SUMMARY FOR PROPOSED RAIL LINES - 2020 DAILY HOME BASED WORK TRIPS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	SOV4 HOV	SOV4 LRT	SOV4 Metro/C	HOV4 LRT	HOV4 Metro/C	LRT4 Metro/C	SOV4HOV4 LRT	SOV4HOV4 Metro/C	SOV4LRT4 Metro/C	HOV4LRT4 Metro/C	Express Local	Super Bus	County Highway	Metro/C
South Alignment	-	13,000	-	13,800	-	-	13,800	-	-	-	-	-	-	-
North Alignment	-	25,100	28,200	27,900	24,500	34,900	27,800	24,300	34,500	34,400	-	-	-	28,700
Subtotal	-	38,100	28,200	41,700	24,500	34,900	41,600	24,300	34,500	34,400	-	-	-	28,700
Transfers	-	2,900	-	3,700	-	-	3,700	-	-	-	-	-	-	-
Total less Transfers	-	35,200	28,200	38,000	24,500	34,900	37,900	24,300	34,500	34,400	-	-	-	28,700

02/18c-97

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Purpose and Need Statement

November 25, 1997



PURPOSE AND NEED STATEMENT

(Version 2.3)

Prepared for:

**The Commonwealth of Virginia
Department of Rail and Public Transportation
and
Department of Transportation**

Prepared by:

**T.Y. LIN INTERNATIONAL
under contract to
BRW, Inc.**

November 25, 1997

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EXECUTIVE SUMMARY

The Virginia Department of Rail & Public Transportation (DRPT) and the Virginia Department of Transportation (VDOT) have jointly undertaken the I-66 Major Investment Study (MIS). The purpose of the I-66 MIS is to evaluate the need for, and to assess the benefits, impacts, and costs associated with, potential transportation improvement options for the defined study area. The **Purpose and Need Statement** defines the rationale for any such action to be taken. The recommended action (i.e., the locally preferred investment strategy) is to be selected by an analysis and evaluation of various alternatives, and needs to demonstrate how it best addresses the transportation issues as stated in this document.

One of the principal objectives of the **Purpose and Need Statement** is to provide a factual and unbiased examination of the transportation related problems and issues as they currently exist and as they are expected to exist in the future. The results of this analysis with respect to existing and projected population and employment, and the associated operations of the transportation systems in the defined study area clearly demonstrate the need to plan for, and ultimately to implement, transportation improvement options that will provide for a balanced transportation system for the project area.

Project Goals:

As part of the initial problem identification and quantification phase of the study, a number of current and evolving transportation problems and issues facing the I-66 corridor were identified and documented in the **Draft Purpose and Need Statement** dated September, 1995. Using these initially identified problems as a point of departure, a series of more specific goals and objectives for the I-66 MIS project were formulated through a collaborative process involving VDOT, DRPT, the Technical Advisory Committee (TAC) and the Policy Advisory Committee (PAC). These goals and objectives, which formed the basis for this refinement of the original statement of purpose and need, are as follows:

Transportation Service / Mobility

1. Accommodate existing and future mobility demands
2. Improve regional access to I-66 corridor activity centers and improve access from the I-66 corridor to the region
3. Improve truck movement

Adjacency and Area-Wide Environmental Impacts

4. Coordinate the transportation improvements to compliment existing and future land uses.
5. Minimize the adverse transportation related environmental impacts and foster positive environmental enhancements with transportation improvements.

Transportation Investment

6. Provide a cost-effective investment strategy for the I-66 corridor

These goals and objectives also provided the basis for the creation of the more detailed evaluation criteria and measures of effectiveness (MOEs) which will be employed throughout the alternatives screening and evaluation process.

The Study Area

The I-66 corridor is an important component of the surface transportation system in the western portion of the Washington Metropolitan Area. The corridor includes approximately one-third of the entire length of I-66 between I-81 at Strasburg and the Potomac River, which separates Arlington County, Virginia from Washington, D.C. The study corridor also includes portions of U.S. Route 29 and U.S. Route 50. I-66 provides one of the two interstate highway connections between the nation's capital and points to the west, with the other being I-270 in the State of Maryland.

As defined for the purposes of this study, the I-66 MIS Corridor extends from the Capital Beltway (I-495) in Fairfax County, Virginia on the east to U.S. Route 15 in Prince William and Loudoun Counties on the west. The northern and southern boundaries of the study corridor are fairly focused in the eastern portion of the study area, encompassing U.S. Route 29 on the north and State Route 236 on the south at the Capital Beltway (I-495), and relatively broad in the western portion of the corridor, and include portions of Fauquier and Loudoun Counties as well as much of western Fairfax County and northern Prince William County. As illustrated on Figure S-1, the resulting overall corridor is somewhat "pie-shaped", and reflects the boundaries of the geographic area containing the largest portion of the general travel market which uses that portion of the study area which lies to the east of the interchange of U.S. Route 50 and I-66.

Projected Growth in Population and Employment

Residential and employment growth within the I-66 MIS project area are both expected to increase significantly over the next 20-25 years, continuing the patterns which have been observed over the past several decades. For example, over the period 1980-1995, Fairfax County alone contributed 31.4% of the total regional population growth of the entire Washington region over that period of 900,800 persons. Although the regional growth rate is projected to slow somewhat over the next 20-25 years in comparison to that observed over the past two decades, it is still estimated that the region will add approximately 750,000 persons over that period.

It is further anticipated that about 50% of this total projected regional growth will take place in Fairfax, Loudoun, and Prince William Counties. Moreover, it is those areas of western Fairfax County, eastern Loudoun County, and western Prince William County which constitute the I-66 MIS corridor study area that are anticipated to absorb most of this projected population growth.

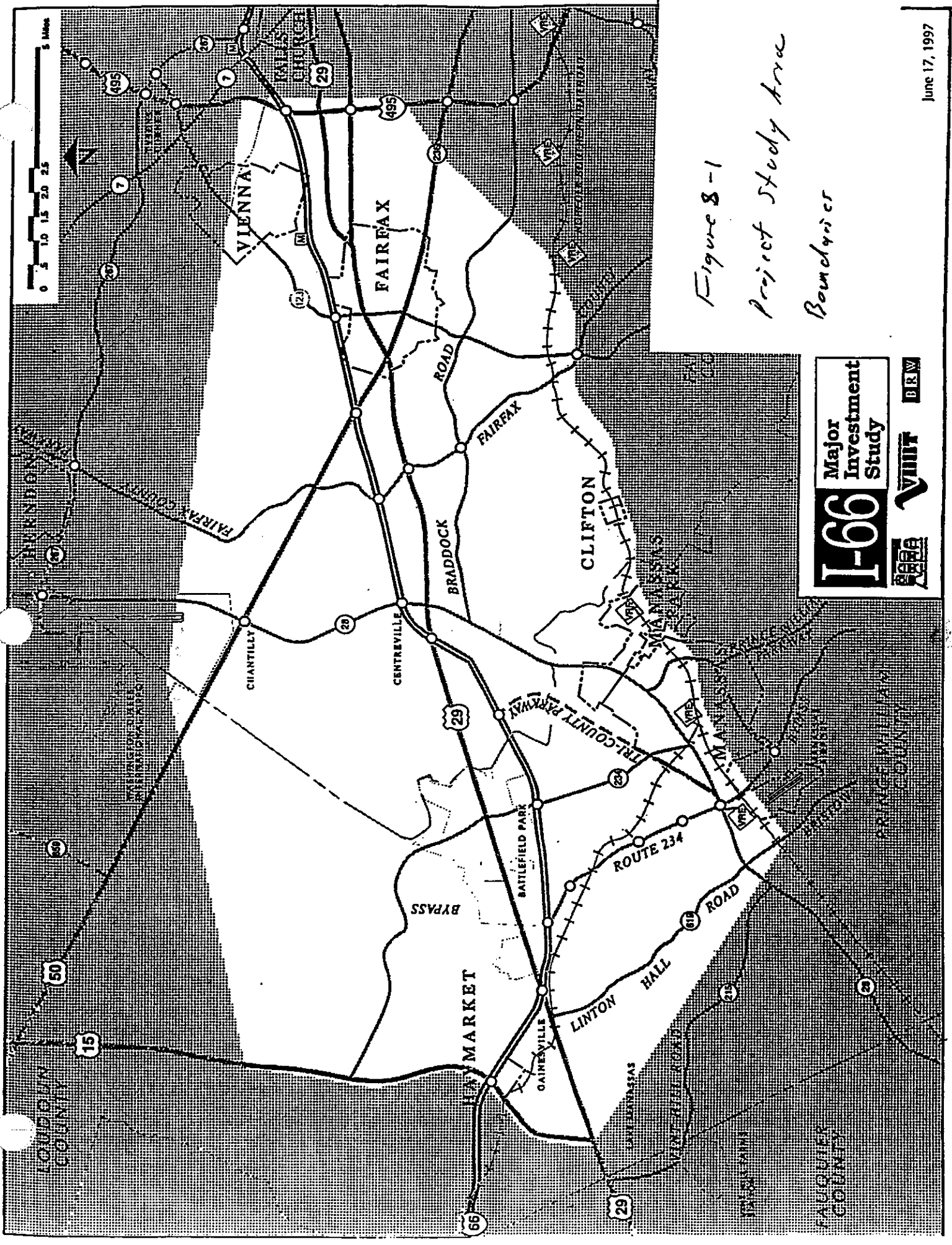


Figure 8-1
Project Study Area
Boundary

I-66 Major Investment Study

VMT **BRW**

The current (1997) population of the I-66 MIS study area is estimated to be approximately 269,000 persons. The most recent socio-economic projections anticipate that the study area population in the year 2020 will be approximately 466,000 persons, or about a 73% increase over current levels.

Similar changes have been observed for employment growth as well. Over the period from 1980-1997, employment in Fairfax County more than doubled, from 210,700 jobs to 507,000 jobs, an increase of about 141%. During this same time period, the total employment of the Washington Metropolitan Region increased by about 57%, from 1,637,800 jobs in 1980 to 2,564,650 jobs in 1997. Thus, the employment growth in Fairfax County alone represented about 32% of the total job growth in the entire region.

Between today and the year 2020, region wide employment is projected to increase by about 34%, to a total of about 3,428,700 jobs. Over this same time period, employment in Fairfax County is projected to reach a total of approximately 719,400 jobs, or about a 42% increase over current levels. Employment growth in Prince William and Loudoun Counties is projected to be even more dramatic, with Prince William County gaining approximately 85,000 jobs (an 83% increase over 1997 levels), and Loudoun County gaining approximately 56,500 jobs (an increase of about 116% over current levels). Within the I-66 study area alone, employment is projected to increase from today's level of about 162,000 jobs to approximately 296,000 jobs by the year 2020. This represents about an 83% increase over current levels.

Transportation Facilities and Travel Demand

The I-66 MIS corridor contains a complex mix of transportation facilities and services. These include an extensive highway network consisting of everything from two lane rural roads following alignments originally established over 100 years ago to major urban freeway facilities with peak period High Occupancy Vehicle (HOV) lanes. Complimenting the study area highway network is a broad range of public transportation services, ranging in scope and complexity from local bus services operated by the City of Fairfax (the "CUE Bus") to the fixed guideway, heavy rail urban transit operations of the Washington Metropolitan Area Transit Authority's Metrorail Orange Line.

Historically, average daily traffic volumes have been steadily increasing on all of the major roadways in the project area. Tables S-1 and S-2, respectively, summarize the observed changes in traffic volume over the period 1985-1996 for the major east-west and north-south highways in the study corridor. As shown on these tables:

- Traffic volumes along I-66 between U.S. Route 15 and the Capital Beltway increased anywhere from 56% to 121% in only 11 years. This is equivalent to average annual percentage increases of between 4.2% and 7.5%. The maximum volume of approximately 196,000 vehicles per day was observed just west of the Capital Beltway in 1996.
- Volume increases along U.S. Route 29 and U.S. Route 50 showed a similar variability, ranging from 26% to 62% along Route 29, and from 40% to 71% along Route 50. The

Table S-1
Historical Traffic Growth on East-West Highways in the I-66 Corridor

Highway Facility / Location	Average Daily Traffic Volumes			Pct. Change 1985 - 1996	Avg. Annual Pct. Increase
	1985	1990	1996		
Interstate Route 66					
West of U.S. Route 15	12,690	20,310	28,000	121%	7.5%
West of State Route 28	42,350	58,420	90,000	113%	7.1%
West of U.S. Route 50	58,960	86,960	96,000	63%	4.5%
West of Capital Beltway (I-495)	125,270	161,950	196,000	56%	4.2%
U.S. Route 29 - Lee Highway					
West of U.S. Route 15	23,050	28,350	36,000	56%	4.1%
West of State Route 28	24,040	28,920	37,000	54%	4.0%
West of U.S. Route 50	24,110	29,790	39,000	62%	4.5%
West of Capital Beltway (I-495)	24,575	27,780	31,000	26%	2.1%
U.S. Route 50 - Lee/Jackson Hwy.					
West of U.S. Route 15	7,885	9,860	13,000	65%	4.7%
West of State Route 28	13,590	19,095	19,000	40%	3.1%
West of Interstate Route 66	40,980	49,760	70,000	71%	5.0%
West of Capital Beltway (I-495)	34,755	42,505	58,000	67%	4.8%

Table S-2
Historical Traffic Growth on North-South Highways in the I-66 Corridor

Highway Facility / Location (All locations just to the north of I-66)	Average Daily Traffic Volumes			Pct. Change 1985 - 1996	Avg. Annual Pct. Change
	1985	1990	1996		
U.S. Route 15 - James Madison Highway	5,285	6,375	9,300	76.0%	5.3%
State Route 234 - Sudley Road	7,245	9,000	13,000	79.4%	5.5%
State Route 28 - Centreville Road	11,340	17,135	46,000	305.6%	13.6%
State Route 7100 - Fairfax County Parkway	NA	16,024	NA	NA	NA
State Route 123 - Chain Bridge Road	36,145	42,290	53,000	46.6%	3.5%
State Route 243 - Nutley Street	24,210	27,005	39,000	61.1%	4.4%
I-495 - Capital Beltway	128,000	160,190	206,000	60.9%	4.4%

Source: Average Daily Traffic Volumes on Interstate, Arterial, and Primary Routes
 Virginia Department of Transportation; 1985-1996

highest observed volume along these two routes was approximately 70,000 vehicles per day on Route 50 just west of its interchange with I-66.

- Traffic volumes on the north-south routes generally exhibited even more dramatic increases than did the east-west oriented routes, particularly in the rapidly developing western portions of the corridor. For example, traffic volumes along U.S. Route 15, State Route 234, and State Route 28 at locations just to the north of their respective interchanges with I-66 increased between 76% and 306%. The percentage increases on the north-south facilities in the eastern portion of the study corridor ranged from 47% to 61%.

The public transportation services and the high occupancy vehicle (HOV) facilities that are currently available in the study corridor are also being heavily utilized. Specifically:

- The approximately 5,000 parking spaces provided at both the Vienna and Dunn Loring stations of the Metrorail Orange Line are essentially filled to capacity by approximately 7:30 AM on a typical weekday.
- During the AM peak period on a typical weekday, approximately 7,000 persons board Metrorail trains at the Vienna Station, with about 2,300 persons boarding at Dunn Loring.
- The Metrorail Orange Line trains which originate at the Vienna Station operate on six (6) minute headways during the AM and PM peak periods. The ridership on these trains is such that additional peak-period trains originate from the West Falls Church Station just inside the Capital Beltway in order to accommodate observed demand.
- Over 80% of the approximately 1,300 parking spaces at the four (4) existing Virginia Railway Express (VRE) stations in the study area are utilized on a typical weekday.
- On a typical weekday, about 55% of the approximately 1,220 parking spaces in the commuter park-and-ride lots in the I-66 MIS study area are filled, with the usage rates of larger lots with express bus service to the Vienna Metro Station being 65% to 85%.
- During the AM peak period, the HOV lane on eastbound I-66 accommodates a total of approximately 9,250 persons in about 3,900 vehicles, with an average vehicle occupancy of 2.38. In total, HOV 2+ vehicles transport approximately 38% of the total persons using eastbound I-66 in the AM peak period in approximately 17% of the total vehicles.
- During the PM peak period, the HOV lane on westbound I-66 accommodates a total of approximately 8,050 persons in about 3,200 vehicles, with an average vehicle occupancy of 2.53. In total, HOV 2+ vehicles transport approximately 43% of the total persons using westbound I-66 in the PM peak period in approximately 20% of the total vehicles.

Looking into the future, travel demands within the study corridor are projected to continue to experience significant increases. Thus, by the Year 2020, it is estimated that:

- Home-based work trips generated by study area residents will increase to a total of approximately 414,000 trips, an increase of about 79%.
- Home-based work trips attracted to destinations in the study corridor will increase to a total of approximately 378,000 trips, an increase of about 83%.
- A large percentage of the home-based work trips either generated by or attracted to the study area have both their origin and their destination in the study area. In 1990, it was estimated that approximately 93,000 trips, or about 40% of the total home-based work trips generated in the corridor, had their destination in the study area as well. By 2020, it is projected that approximately 191,000 trips, or about 46% of the total home-based work trips generated by corridor residents, will have their destination in the study area. This represents about a 105% increase in the number of intra-corridor work trips.
- The number of corridor generated home-based work trips destined for the D.C. core and the Maryland suburbs are projected to increase from about 86,000 in 1990 to about 118,000 in 2020, with the majority of this increase going to the Maryland suburbs.
- Work trips generated in the corridor destined for other locations in the Northern Virginia region outside of the I-66 study area are projected to increase from about 52,000 in 1990 to about 105,000 in 2020.

Clearly, increases in travel demand of these magnitudes would place additional strain on what is already in many parts of the study area an overloaded and heavily congested transportation system. To illustrate this, the projected travel demand patterns for 1990 and 2020 were assigned to the 1990 and 2020 highway networks and an assessment of the peak-hour / peak direction volume to capacity ratio (V/C) was made. The major findings from this analysis were as follows:

East-West Oriented Travel Along the I-66 Corridor:

- In 1990, the PM peak-hour, peak-direction traffic demand exceeded the available capacity on the east-west routes just west of I-495 (V/C ratio = 1.43), and just west of the junction of I-66 and Route 50 west of the City of Fairfax (V/C ratio = 1.21)
- By 2020, traffic volumes will increase substantially, but those roadway improvements included in the CLRP will provide some additional roadway capacity.

- By 2020, the PM peak-hour, peak-direction traffic volumes are projected to exceed the available capacity on the east-west routes at locations just west of I-495 (V/C ratio = 1.42), just west of the Route 50 / I-66 junction (V/C ratio = 1.19), and just east of Route 15 (V/C ratio = 1.05). East of Route 234, the projected traffic volume will approximately equal the anticipated capacity (V/C ratio = 0.93).

North-South Oriented Travel Across the I-66 Corridor:

- In 1990, the PM peak-hour, peak-direction travel demand exceeded the available capacity of the north-south routes located on both the north side (V/C ratio = 1.05) and the south side (V/C ratio = 1.05) of I-66 from I-495 west to Route 50, and on the south side of I-66 between Route 29 at Gainesville and Route 234 at Manassas (V/C ratio = 1.11).
- By 2020, traffic volumes will increase substantially, but those roadway improvements included in the CLRP will provide some additional roadway capacity.
- By 2020, the PM peak-hour, peak-direction traffic volumes are projected to exceed the available capacity on the north-south routes located on both the north side (V/C ratio = 1.15) and the south side (V/C ratio = 1.18) of I-66 from I-495 west to Route 50, and on the north side of I-66 between Route 50 and Route 234 (V/C ratio = 1.12).

These projected congestion levels, even with the full implementation of all of the highway and transit system improvements within the corridor that are included in the currently adopted regional CLRP, clearly indicate the need for the provision of additional transportation system capacity in the study area.

Planning Context

All of the local jurisdictions within the defined I-66 MIS study area have developed and adopted comprehensive plans which seek to achieve a balance between the travel demands generated by land development and the capacity of the multi-modal transportation system to accommodate those demands at an acceptable level of transportation service. In general, the comprehensive plans for the communities in the I-66 corridor have all identified the desirability of an increased reliance on the use of multi-occupant vehicles, as opposed to single-occupant vehicles. Representative excerpts from these comprehensive planning documents are presented below:

Fairfax County Policy Plan - Transportation Goal: "Land use must be balanced with the supporting transportation infrastructure, including the regional network, and credibility must be established within the public and private sectors that the transportation program will be implemented....Regional and local efforts to achieve a balanced transportation system through the development of rapid rail, commuter rail, expanded bus service and the reduction of excessive reliance upon the automobile should be the keystone policy for future planning and facilities."

Prince William County Comprehensive Plan - Transportation Plan Chapter - GOAL: "To achieve and sustain a complete, safe, and efficient multimodal circulation system and plan so that existing and future components of the transportation network will provide the capacity necessary to meet the demands placed upon the system."

The ongoing I-66 MIS process is thus supportive of the currently adopted transportation goals, objectives, and policies of the effected Town, City, and County jurisdictions.

Conclusions

Based on the combination of the current and projected future imbalances between travel demand and transportation system capacity, and increasing development pressures due to projected growth in population and employment, there is a need to develop and evaluate transportation improvement alternatives as a part of the I-66 Major Investment Study. The study will examine a range of multi-modal alternatives that can work together to improve accessibility, mobility, and goods movement in the study area.

The need for additional transportation system improvements within the study area, oriented to both east-west and north-south travel movements has been preliminary identified. Any such improvements must also positively contribute to the most cost-effective utilization of the transportation investments that have already been made, or are currently planned for implementation, in the region.

The complete **Project Purpose and Need** document (of which this is merely a summary) provides more detailed background data and assessments of the various issues affecting travel in the I-66 MIS study area.

PURPOSE AND NEED STATEMENT

I-66 MAJOR INVESTMENT STUDY

INTRODUCTION

This document represents the second version of the Purpose and Need Statement for the I-66 Major Investment Study. It should be particularly understood by the readers that this document has evolved over the course of the project and will continue to be modified and updated as appropriate until the scheduled completion of this effort in the Summer of 1998. The intent is to prepare this discussion to a level of detail and quality in order to allow for its use as the "Purpose and Need" chapter of any subsequent Environmental Assessment (EA) or Environmental Impact Statement (EIS) which may be associated with any particular project(s) identified through the course of the study process.

The I-66 corridor is an important component of the surface transportation system in the western portion of the Washington Metropolitan Area, and, by extension, the mid-Atlantic region. The corridor includes approximately one-third of the entire length of I-66, which stretches from I-81 at Strasburg to the Potomac River, with the latter separating Arlington County, Virginia from Washington, D.C. The study corridor also includes those portions of U.S. Route 29 and U.S. Route 50 between Fauquier and Loudoun Counties, respectively, on the west and the Capital Beltway (I-495) on the east. I-66 provides one of the two interstate highway connections between the nation's capital and points to the west, with the other being I-270 in the State of Maryland. I-270 begins at the Capital Beltway (I-495) and ends at I-70 in Frederick, Maryland. As an interstate highway, I-66 is a fully access-controlled facility, with a variable number of travel lanes ranging from four to eight over the length of the study corridor.

In the Commonwealth of Virginia, U.S. Route 29 extends from the Potomac River at Rosslyn in Arlington County through the west-central portion of the state to the Virginia / North Carolina state line at Danville, Virginia. Route 29 runs in a generally east-west direction from the Potomac River to Gainesville in Prince William County and closely parallels I-66 between these limits. Beyond Gainesville, Route 29 follows a more south / southwest orientation, and provides a major north-south travel corridor located between the parallel interstate highway corridors of I-81 to the west and I-95 to the east. Throughout most of its length in Virginia, U.S. Route 29 is a multi-lane highway, with varying levels of access control.

Similarly, the Virginia portion of U.S. Route 50 extends from the Potomac River at Rosslyn in Arlington County through the northern Virginia region to the Virginia / West Virginia state line. From the Potomac River west to the City of Fairfax, Route 50 runs in an east-west orientation and parallels I-66 between these limits. Beyond the City of Fairfax, Route 50 follows a more northwesterly orientation, and serves as a linkage between the Northern Virginia region and I-81 at Winchester. As was the case with Route 29, most of the length of Route 50 in Virginia consists of a multi-lane highway, with varying levels of access control. The regional context of these facilities is shown in **Figure 1**.

As defined for the purposes of this study, the limits of the I-66 MIS Corridor extend from the Capital Beltway (I-495) in Fairfax County, Virginia on the east to U.S. Route 15 in Prince William and Loudoun Counties on the west. The northern and southern boundaries of the study corridor have been rather loosely defined in order to allow for the appropriate level of examination of all of the major transportation issues facing this portion of the Metropolitan Washington Region. The northern and southern boundaries are thus fairly focused in the eastern portion of the study area, encompassing U.S. Route 29 on the north and State Route 236 on the south at the Capital Beltway, and relatively general in the western portion of the corridor, and include portions of Fauquier and Loudoun Counties as well as much of western Fairfax County and northern Prince William County. As illustrated on **Figure 2**, the overall corridor is somewhat "pie-shaped", and reflects the boundaries of the geographic area thought to contain the largest portion of the general travel market which uses that portion of the study area which lies east of the interchange of U.S. Route 50 and I-66.

The I-66 MIS corridor has four rather distinct subareas which differ from one another in terms of physical characteristics, traffic service provided, and future needs. These basic corridor segments are as follows:

- **The East Corridor** - From the Capital Beltway (I-495) to the U.S. Route 50 / I-66 interchange;
- **The Central Corridor** - From the U.S. Route 50 / I-66 interchange to the Fairfax / Prince William County Line;
- **The West Corridor** - From the Fairfax / Prince William County Line west to U.S. Route 15; and
- **The Outer Corridor** - from U.S. Route 15 to the western Fauquier County Line.

The differences between these corridor segments are further discussed under the **NEED FOR PROJECT** section of this document.



Figure 1
Regional Context

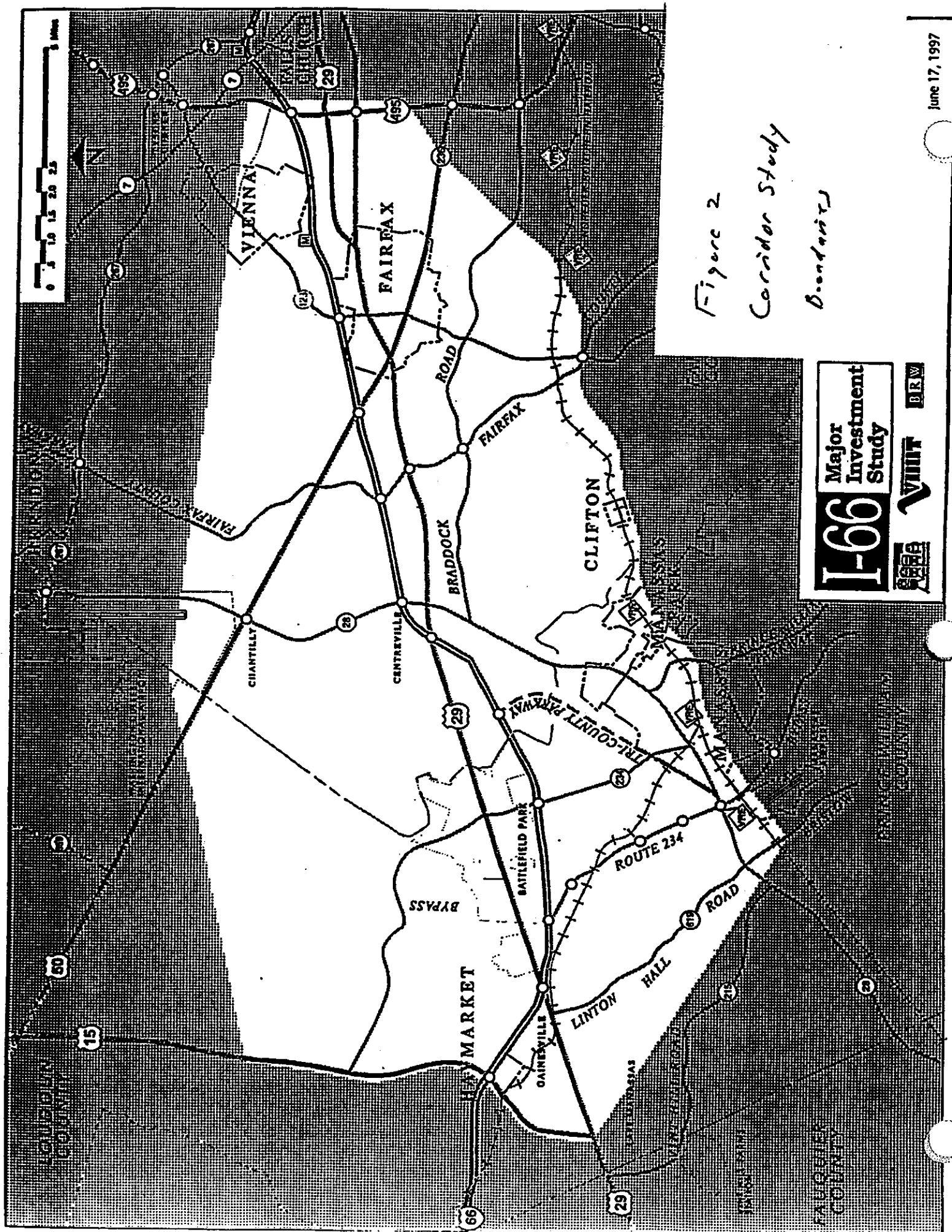


Figure 2
Corridor Study
Boundaries

I-66 Major Investment Study

VHUT **BRW**

BACKGROUND

Over the past several decades, the I-66 corridor and its environs have been the subject of both extensive previous technical analysis and the expenditure of considerable amounts of money with which to improve the basic transportation infrastructure. Some of these physical improvements have included:

- The construction of the Metrorail Orange Line beyond the Capital Beltway, with stations provided in the vicinity of State Route 650 - Gallows Road (Dunn Loring) and State Route 243 - Nutley Street (Vienna) in Fairfax County in the median of the I-66 mainline;
- The ongoing widening and reconstruction program for the I-66 mainline and its interchanges from the Capital Beltway west to Route 234 at Manassas;
- The construction of High Occupancy Vehicle (HOV) ramps at Stringfellow Road (State Route 645) and Monument Drive;
- The implementation of the Virginia Railroad Express (VRE) commuter railroad service along the Norfolk-Southern Railroad line through Manassas; and
- The construction of new circumferential highways across the corridor, such as the multi-lane Fairfax County Parkway (State Route 7100) and the reconstruction of State Route 28 (Sully Road) to a multi-lane facility.

There are also a number of other large scale transportation planning efforts ongoing either within or immediately adjacent to the I-66 MIS corridor whose conclusions and recommendations will affect the outcome of this current I-66 corridor study. These other planning studies include, but are not limited to: The Route 29 Corridor Development Study, the Western Transportation Corridor Study, the Manassas Railroad Alignment Improvement Study, and the Capital Beltway Major Investment Study.

The I-66 Major Investment Study was formally initiated in July, 1995. It is included in the Interstate System Improvement Program portion of the Fiscal Year 1998-2003 Statewide Transportation Improvement Program of the Virginia Department of Transportation as a multi-modal major investment study to consider the need for possible future highway and transit improvements to the I-66 corridor in Fairfax and Prince William Counties (Ref. 1).

Indicative of the study's multi-modal and multi-jurisdictional nature, the role of project sponsor is being jointly shared by the Virginia Department of Rail and Public Transportation (DRPT) and the

Transportation Planning Division of the Virginia Department of Transportation (VDOT). The project team includes representatives from VDOT, DRPT, Fairfax County, the City of Fairfax, Prince William County, Loudoun County, Fauquier County, the Washington Metropolitan Area Transit Authority (WMATA), the Northern Virginia Transportation Commission (NVTC), and the Potomac - Rappahannock Transportation Commission (PRTC).

Project Goals and Objectives:

The principal purpose of this assignment is to define the most appropriate transportation investment strategy for the study area which will be able to alleviate both currently observed and projected transportation problems in the corridor over the next 20-25 years. As part of the initial problem identification and quantification phase of this study, which involved coordination with the public and with regional, state, and local agencies, a number of current and evolving transportation problems and issues facing the I-66 Corridor were identified and documented in the Draft Purpose and Need Statement dated September, 1995 (Ref. 2). These were as follows:

Transportation Service / Mobility

- Existing vehicular congestion in both peak periods
- Forecast of worse congestion and an increase in vehicle-miles of travel in the year 2020
- Insufficient transit accessibility to employment opportunities in the corridor
- Lack of management and coordination of truck movement in the corridor
- Lack of coordination and management of the multi-modal transportation system in the corridor

Adjacency and Area-Wide Environmental Effects

- Inadequate right-of-way and physical limitations on ability to expand corridor infrastructure
- Existing and forecasted dispersion of population and employment
- Concerns about air quality

Transportation Investment

- Lack of financial resources to pay for needed transportation facilities and services

Using these initially identified problems as a point of departure, a series of more specific goals and objectives for the I-66 MIS project were formulated through a collaborative process involving VDOT, DRPT, the project's Technical Advisory Committee (TAC) and the project's Policy Advisory Committee (PAC). These goals and objectives, which have formed the basis for this refinement of the original statement of purpose and need, are as follows:

Transportation Service / Mobility

1. Accommodate existing and future mobility demands.
2. Improve regional access to I-66 corridor activity centers and improve access from the I-66 corridor to the region.
3. Improve truck movement

Adjacency and Area-Wide Environmental Impacts

4. Coordinate the transportation improvements to compliment existing and future land uses.
5. Minimize the adverse transportation related environmental impacts and foster positive environmental enhancements with transportation improvements.

Transportation Investment

6. Provide a cost-effective investment strategy for the I-66 corridor

These study goals and objectives also provided the basis for the creation of the more detailed evaluation criteria and measures of effectiveness (MOEs) which will be employed throughout the alternatives screening and evaluation process to arrive at a recommended locally preferred transportation investment strategy for the study area.

EXISTING CORRIDOR TRANSPORTATION FACILITIES AND SERVICES

The I-66 MIS corridor contains a complex mix of transportation facilities and services. These include an extensive highway network consisting of everything from two lane local roads following alignments originally established over 100 years ago to major urban freeway facilities. Complimenting the study area highway network is a broad range of public transportation services, ranging in scope and complexity from local bus services operated by the City of Fairfax (the "CUE Bus") to the fixed guideway, heavy rail urban transit operations of the Washington Metropolitan Area Transit Authority's Metrorail Orange Line. A brief description of the major elements of the existing transportation system in the study area is presented below. Figure 3 illustrates the principal elements of the existing study area highway system.

ROADWAY ELEMENTS:

I-66 was an original element of the national system of interstate and defense highways, and was initially envisioned in the 1950s as a rural freeway linking I-81 in the Shenandoah Valley of Virginia with Washington, D.C. The portions of the highway west of the Capital Beltway (I-495) were constructed in the early 1960s as a four- / six-lane freeway using primarily rural design criteria. Inside of the Capital Beltway, controversy over the appropriate alignment and cross-section delayed the completion of construction until the early 1980s, when the existing four-lane, urban expressway type facility was finally opened to traffic. Over the past several decades, several sections of I-66 within the defined corridor study area have been improved and widened, with the current configuration (October, 1997) of the facility being as follows:

- Four (4) general use travel lanes, from I-81 to the U.S. Route 29 interchange at Gainesville. (Note: preliminary engineering studies are currently underway to provide an additional general use travel lane in each direction between Route 29 at Gainesville and the Route 15 interchange at Haymarket, with the use of these new lanes to be restricted to HOVs in the peak travel direction during peak hours.)
- Four (4) general use travel lanes, from the U.S. Route 29 interchange at Gainesville to the Route 234 interchange at Manassas. (Note: final design activities are presently underway and construction is to be initiated in the next few years to provide an additional general use travel lane and a peak period HOV lane in each direction over this segment, with the result being an eight-lane cross-section. The peak period HOV lanes would be available for use by general traffic in non-peak travel periods.)
- Eight (8) general use travel lanes, from Route 234 at Manassas to the U.S. Route 50 interchange at Fair Oaks, with the left side travel lane adjacent to the median restricted to use by HOVs during the peak period in the peak travel direction. The resulting peak

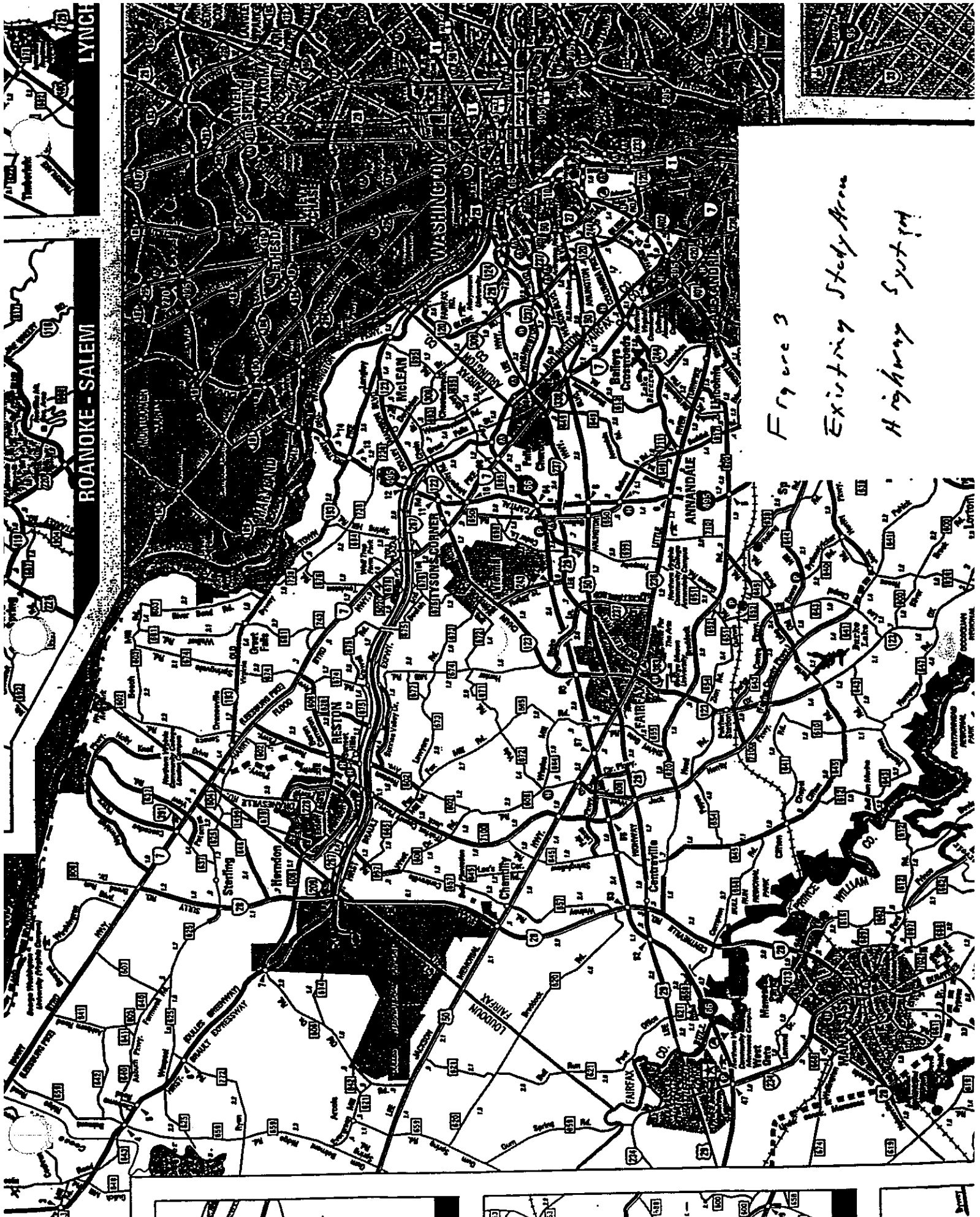


Figure 3
Existing Study Area
Highway System

period, peak direction cross-section is thus three(3) general use lanes and one (1) HOV lanes, with the off-peak direction operations remaining as four (4) general use lanes.

- Six (6) general use travel lanes, from Route 50 to the interchange with the Capital Beltway (I-495). During peak periods, the use of the general use lane adjacent to the median is limited to HOVs in the peak travel direction, with use allowed of the right-side strengthened roadway shoulder area as a general use travel lane. The resulting peak period, peak direction cross-section is thus three(3) general use lanes and one (1) HOV lane, with the off-peak direction operations remaining as three (3) general use lanes.
- Four (4) general use travel lanes, from the Capital Beltway to the Theodore Roosevelt Bridge over the Potomac River. This section of I-66 is restricted to use by only HOV 2+ vehicles during peak travel periods in the peak direction (i.e., eastbound in the AM and westbound in the PM), and trucks are banned from the use of this section of the facility at all times.

I-66 is classified as an urban interstate from the Potomac River to the Route 29 interchange at Gainesville, and as a rural interstate from Route 29 to the limits of the study area and beyond to its terminus with I-81.

U.S. Route 50 is a multi-lane, median divided highway over nearly the entire limits of the study corridor. From just west of the Fairfax / Loudoun County line to just west of Route 28 in Fairfax County, Route 50 is a four-lane rural / suburban highway, with access provided by means of at-grade intersections. West of this location, Route 50 is a two-lane rural highway through the remainder of Loudoun County. The junction with Route 28 is a grade-separated interchange. From just west of the Route 28 interchange east to the I-66 interchange at Fair Oaks, Route 50 is typically a six-lane, median divided suburban arterial, with access mostly provided by at-grade intersections, although grade-separated interchanges are provided at the junctions with the Fairfax County Parkway (State Route 7100), West Ox Road (State Route 608), and I-66. Some short sections along this portion of the facility still provide only a four-lane, median divided cross-section at this time.

From I-66 east through the City of Fairfax and beyond to the Capital Beltway, Route 50 is a four- / six-lane suburban arterial street, with access provided by at-grade intersections. There is a major grade-separated urban interchange provided between Route 50 and the Capital Beltway, which includes grade separated junctions with Route 50 just west of the Beltway at Gallows Road and just east of the Beltway at Fairview Road. Over essentially all of its length through the study area, Route 50 is classified as an urban principal arterial.

Similarly, **U.S. Route 29** is predominantly a multi-lane, median divided highway throughout the limits of the study corridor. From the western study area boundary near the Prince William / Fauquier County Line to just east of the I-66 interchange at Gainesville, Route 29 is a four-lane, median divided rural highway, with access provided by at-grade intersections. From just east of the I-66 interchange at Gainesville to just east of the Fairfax / Prince William County Line, Route 29 narrows to a 2-lane cross-section as it passes through the Manassas National Battlefield Park.

From the east side of the Manassas National Battlefield Park east through the western portions of Fairfax County, the City of Fairfax, and through those portions of Fairfax County to the east of the City of Fairfax to the Capital Beltway (I-495), Route 29 is a multi-lane arterial, typically providing four travel lanes, but with some short sections having a six-lane cross-section. Access is provided by means of at-grade intersections, with the exception of grade-separated interchanges with I-66 between the Manassas Battlefield and Route 28, and with the Fairfax County Parkway (State Route 7100) just west of the City of Fairfax. Through the City of Fairfax, Route 29 and Route 50 use the same section of roadway. There is no interchange provided between Route 29 and the Capital Beltway I-495), with Route 29 passing over the Capital Beltway on a bridge structure.

There are several other east-west arterial routes which pass through the study area. **State Route 236 (Little River Turnpike)** is a 4-lane, median divided urban arterial from its beginning at the intersection of Route 29 and Route 50 in the City of Fairfax, east past its interchange with the Capital Beltway (I-495). **State Route 620 (Braddock Road)** extends across the central portion of the study area, beginning as a two-lane rural highway in eastern Loudoun County and maintaining this cross-section to the east past Route 28 in western Fairfax County. At Route 28, it becomes a multi-lane, median-divided suburban arterial, and continues this basic cross-section to the east through central Fairfax County to an interchange with the Capital Beltway (I-495) and beyond to its terminus in the City of Alexandria. The approximately three mile long portion of Braddock Road between Burke Lake Road (State Route 645) and its interchange with I-495 is a six- / eight-lane arterial facility, with four lanes provided west of Burke Lake Road (Route 645).

Reflecting the historical east-west / radial orientation of regional and intercity travel in the study area; that is, from the Northern Virginia suburbs to the City of Alexandria and Washington, D.C., the number and capacity of the more locally oriented, north-south, circumferential highway facilities has been somewhat more limited until relatively recently.

The general eastern limits of the corridor area are defined by the **Capital Beltway (I-495)**. Originally constructed in the late 1950s and early 1960s as a four- / six-lane circumferential freeway around the core of the Washington region, I-495 has undergone a continuing series of improvements over the past several decades in response to growing travel demands. Most notably, the Northern Virginia portion of the Beltway, between the Woodrow Wilson Bridge at

Alexandria on the south and the American Legion Bridge at Cabin John on the north, was widened and reconstructed to a basic eight-lane cross-section in the mid-1970s.. Although a number of interchange improvements have been made at various locations, the basic roadway dimension has remained that of four, general use travel lanes in each direction since that time.

Often referred to as "*The Wall*", especially at the junction with I-66, the Beltway has most recently been the subject of its own Major Investment Study. The Final Report for the Capital Beltway MIS was issued in January, 1997 (Ref. 3), and recommended several improvement alternatives for advancement into the more detailed preliminary engineering and environmental impact statement preparation phases. These general recommendations identified the need for the widening and reconstruction of the Beltway mainline and the reconstruction of all of the existing interchanges in order to be able to better accommodate projected travel demands over the next 20-25 years. The concepts still under investigation include options for the provision of express and local lanes along the Beltway mainline (similar to those which currently exist along portions of I-270 in Montgomery County, MD), and incorporate lane management strategies to provide preferential treatment for HOVs. The preliminary recommendations of the Beltway MIS are being incorporated into the ongoing I-66 MIS. This is particularly the case with the ideas generated by the Beltway MIS for the reconstruction of the I-66 / I-495 and U.S. Route 50 / I-495 interchanges.

One of the more important north-south / circumferential routes crossing the study area is **State Route 123**, portions of which are referred to locally as both Chain Bridge Road and Ox Road. From its beginning at the west end of the Chain Bridge across the Potomac River in Arlington County through the communities of McLean, Tysons Corner, the Town of Vienna, the City of Fairfax, and southern Fairfax County to its terminus at U.S. Route 1 at Woodbridge in Prince William County, Route 123 provides both an interconnection between the various radial routes it crosses and a circumferential travel path of its own. Throughout the boundaries of the project area, Route 123 is generally a four-lane median divided suburban arterial. The only major exception to this is a basic two-lane cross-section along Route 123 between its intersections with Route 29/50 and Route 236 in the City of Fairfax.

A more recently constructed north-south / circumferential facility through the project area is the **Fairfax County Parkway (State Route 7100)**. Ultimately planned to be a four- / six-lane arterial route which would extend for approximately 35 miles from State Route 7 north of Reston and Herndon to U.S. Route 1 at Fort Belvoir, approximately 20 miles of the facility are currently completed and open to traffic. The remainder of the facility is planned for construction over the next 10 years. Over much of its length, particularly those sections passing through the I-66 MIS study corridor, the Fairfax County Parkway is a new location, four-lane, controlled access arterial, with junctions provided primarily only at intersecting public highways. Within the study area, grade-separated interchanges are currently provided along the Parkway at Route 50, I-66, Route

29, and Braddock Road. At-grade junctions exist at Fair Lakes Parkway, and at several locations north of Route 50.

Route 28, which is variously referred to as Sully Road, Centreville Road, and Nokesville Road through the limits of the study area, follows a generally north-south orientation from its beginning at Route 7 at Sterling in eastern Loudoun County southward through eastern Loudoun and western Fairfax Counties to the City of Manassas in northwestern Prince William County. From the City of Manassas southward to its terminus at Route 29 in Fauquier County, Route 28 follows more of a north-east to south-west orientation. Between the northern study area boundaries to the north of Route 50 and Route 29 in Centreville, Route 28 is a six-lane, controlled access expressway, with a mixture of major, signalized at-grade intersections at public streets and grade-separated interchanges at Route 50 and I-66. An interchange at the junction of Route 28 and Route 29 in Centreville is planned to begin construction in Fiscal Year 2000. From Route 29 south to Route 234 in the City of Manassas, Route 28 is a four-lane, median-divided highway. This basic cross section continues through the City of Manassas along a pair of parallel one-way streets. South of the City of Manassas, Route 28 narrows to an older two-lane, rural cross-section highway from the vicinity of the Manassas Municipal Airport to its terminus at Route 29 in Fauquier County.

U.S. Route 15 (James Madison Highway) enters the Commonwealth of Virginia from the State of Maryland over the Potomac River at Point of Rocks in the northern portion of Loudoun County and then proceeds south past Route 7 at Leesburg, Route 50, and I-66, to Route 29, where a common section of roadway is signed as both Route 15 and Route 29 from just south of Haymarket in Prince William County to the Town of Culpeper in Culpeper County. From the point where it enters the I-66 MIS corridor to its intersection with Route 29 south of Haymarket, Route 15 is a two-lane, rural highway. As noted above, the section of Route 15 / Route 29 south and west of the I-66 interchange at Gainesville is a four-lane, median divided, rural highway.

State Route 234 extends from U.S. Route 15 in Loudoun County north of I-66, proceeds to the east and south through the Manassas National Battlefield Park to an interchange with I-66 north of the City of Manassas, continues to the south and east and passes through the City of Manassas and western Prince William County, and terminates at U.S. Route 1 at Dumfries in southeastern Prince William County just east of its interchange with I-95. Between Route 15 and its interchange with I-66 just north of the City of Manassas, Route 234 is a two-lane, rural highway, with access provided via at-grade intersections. From the I-66 interchange south to Route 28 in the City of Manassas, Route 234 is a six-lane, median divided suburban arterial highway, narrowing to a four-lane, divided cross-section south of the Manassas City Limits at Godwin Drive. South of Route 28 in the City of Manassas, Route 234 is first a four-lane, undivided city street, and then becomes a two-lane, rural highway from the Manassas City Limits to a point approximately two miles to the west of its interchange with I-95 at Dumfries. The section of

Route 234 from just west of I-95 to Route 1 is a four-lane, median divided arterial. The current two-lane sections of Route 234 between the City of Manassas and I-95 are presently being designed for widening and reconstruction to a four-lane, median divided cross-section. The construction of these sections of the route are scheduled to take place over the next three to five years.

The Route 234 Manassas Bypass is a new location, limited access four-lane freeway facility which would initially extend from the junction of existing Route 234 and State Route 649 (Limestone Road) south of the City of Manassas to the north around the west side of the City to a new interchange with I-66 approximately two miles west of the existing I-66 / Route 234 interchange. Ultimately, this type of improvement is envisioned as extending from I-66 north and west to Route 15. The section of the Manassas Bypass from the I-66 interchange south and east to Route 28 is currently under construction, with the section between Route 28 and the Route 234 / Route 649 junction presently scheduled to begin construction during Fiscal Year 1998-99.

The Prince William Parkway (State Route 3000) serves a function similar to the Fairfax County Parkway (Route 7100); that is, the satisfaction of a circumferential travel demand across Prince William County linking the historic radial travel corridors focusing on Washington, D.C. The Prince William Parkway traverses the central portion of the County with a south-east to north-west orientation, from I-95 in the Dale City area north and west to the City of Manassas. Over its length, the Prince William Parkway is a four- / six-lane, median divided suburban arterial highway, with access provided principally by means of at-grade intersections with public streets.

In addition to these major state primary highways, there are a number of other state primary and secondary routes in the corridor study area which serve to interconnect the east-west oriented radial and north-south oriented circumferential routes. These include, but are not limited to, the following:

In Fairfax County:

- Route 645 - Lee's Corner Road / Stringfellow Road / Clifton Road / Burke Lake Road
- Route 643 - Burke Centre Parkway
- Route 650 - Gallows Road
- Route 699 - Prosperity Road
- Route 237 - Pickett Road
- Route 655 - Shirley Gate Road
- Route 608 - West Ox Road
- Route 657 - Centreville Road / Walney Road
- Route 609 - Pleasant Valley Road

In Prince William County:

- Route 619 - Linton Hall Road
- Route 621 - Devlin Road / Balls Ford Road
- Route 674 - Wellington Road
- Route 663 - Davis Ford Road
- Route 215 - Vint Hill Road
- Route 676 - Catharpin Road

In Loudoun County:

- Route 659 - Gum Springs Road / Belmont Ridge Road
- Route 606 - Old Ox Road
- Route 620 - Braddock Road
- Route 705 - Catharpin Road
- Route 621 - Bull Run Post Office Road

In Fauquier County:

- Route 600 - Broad Run Church Road / Beverleys Mill Road
- Route 605 - Dumfries Road
- Route 676 - Riley Road
- Route 602 - Rogues Road

A number of these facilities, particularly in Fairfax and Prince William Counties, have been widened and reconstructed over the past two decades to multi-lane cross-sections in an attempt to accommodate ever increasing travel demands. However, for the most part, the secondary route system throughout most of the study area remains a group of two-lane, rural highways following alignments originally established in the late 1800s and early 1900s.

TRANSIT SERVICES

As would be expected in such a rapidly urbanizing portion of a major metropolitan area, the extent of the existing public transportation system within the I-66 MIS is quite broad, from both a geographic and a service type perspective. Current public transportation operations within the I-66 study area include:

- The western portion of the Metrorail Orange Line and a number of fixed-route bus routes operated by the Washington Metropolitan Area Transit Authority (WMATA)

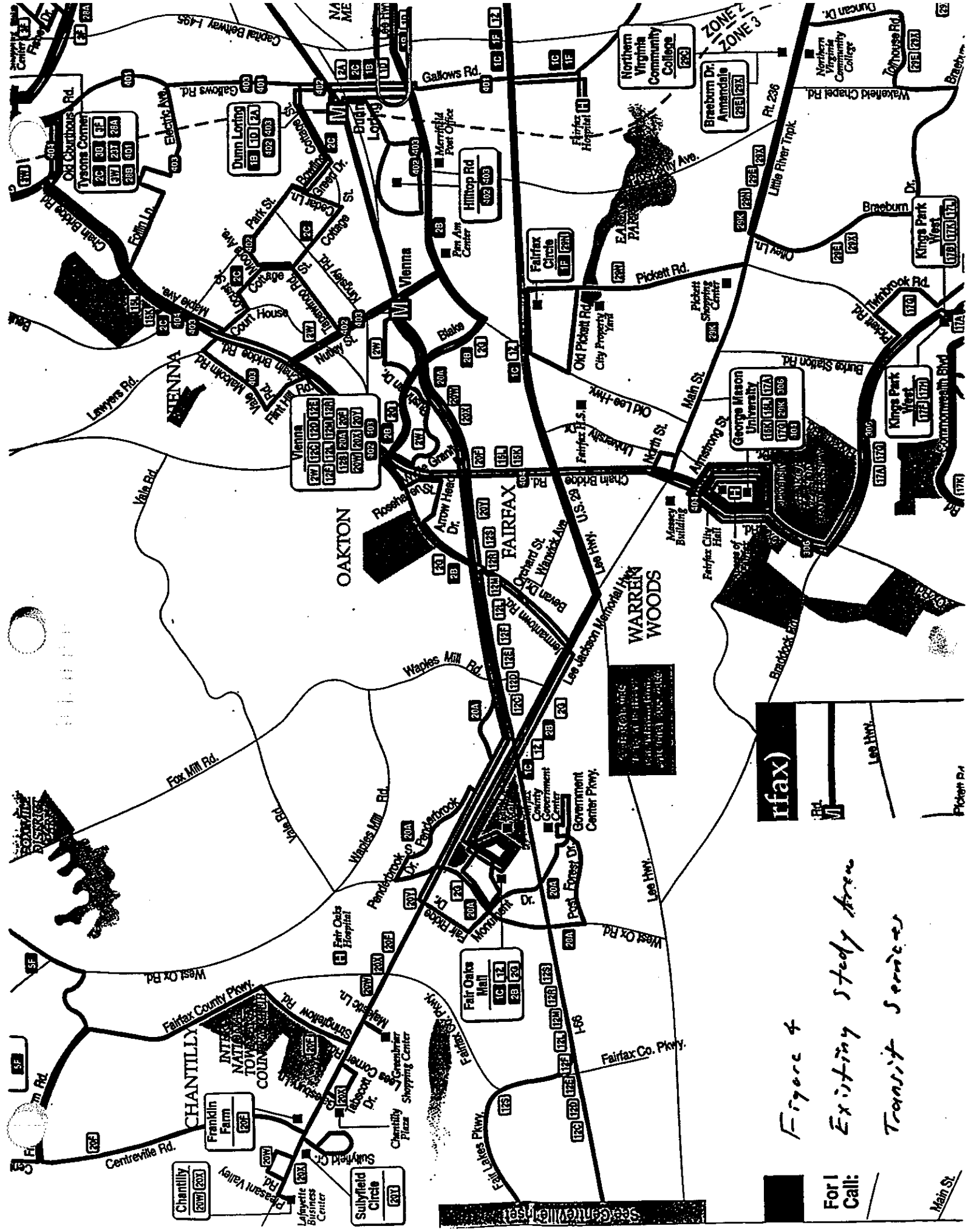
- Fairfax Connector fixed-route and Fastran demand-responsive bus services operated by the Fairfax County Office of Transportation;
- The CUE Bus System operated by the City of Fairfax;
- The OmniRide and OmniLink bus operations of the Potomac - Rappahannock Transportation Commission (PRTC) in Prince William County; and
- The Virginia Railway Express (VRE) commuter rail service between Manassas and downtown Washington, D.C., which is administered jointly by PRTC and the Northern Virginia Transportation Commission (NVTC).

A brief description of each of these transit services, which are illustrated on Figure 4, is presented below:

Washington Metropolitan Area Transit Authority (WMATA):

The western portion of the Metrorail Orange Line, linking the Town of Vienna in central Fairfax County with downtown Washington, D.C. and beyond to New Carrollton in Prince George's County, Maryland, is located in the median of I-66 from Vienna east to Ballston in Arlington County, Virginia. The Orange Line's western terminus station (*Vienna-Fairfax*) is located just west of the interchange between I-66 and Nutley Street (Route 247) adjacent to the Town of Vienna. This large, center platform station is the focus of much of the current bus service in the I-66 corridor, with bus bays located on both the north and south sides of I-66. This station currently has a total of 3,641 long-term parking spaces. These are provided in a mixture of surface lots and a 1,500 space multi-level parking structure located on the north side of the station. Information provided by WMATA staff indicates that essentially 100% of the available station parking is filled by approximately 7:30 AM on a typical non-summer weekday. Typical average total weekday two-way ridership at the Vienna Station is approximately 19,152 persons per day (May, 1997 data), with about 36.8 percent of the total two-way station patronage boarding in the AM peak period and about 36.3 percent departing in the PM peak period.

Located approximately 2.5 miles east of the *Vienna-Fairfax Station* is the *Dunn Loring - Merrifield Metrorail Station*. Located in the median of I-66 at Gallows Road (State Route 650) just to the west of the Capital Beltway / I-66 interchange, the *Dunn Loring Station* is a large, center platform station, with all bus boarding bays and parking areas sited on the south side of I-66 to the west of Gallows Road. The station has a total of approximately 1,319 long term parking spaces, all of which are in the form of surface lots which are essentially fully occupied by 7:30 AM. The typical average total weekday two-way ridership at this station is approximately 7,765 persons per day, with about 29.5 percent of the total station patronage boarding in the AM



peak period and about 30.8 percent departing in the PM peak period.

The next Metrorail Orange Line station (*West Falls Church*) is located approximately two miles inside the Capital Beltway in the City of Falls Church, and is thus outside of the defined project study area. At the present time, the Orange Line operations to and from the Vienna and Dunn Loring stations provide six-minute headways during the AM and PM peak periods, typically using a mixture of 4-car and 6-car trains. An additional 11 peak-hour "trippers" originate from the West Falls Church Station and operate on approximately six-minute headways to provide additional capacity along the portions of the Orange Line through Arlington County into downtown Washington.

Table 1 on the following page summarizes the current Metrobus operations in the I-66 corridor. As illustrated on this table, current Metrobus service is essentially operated only during the AM and PM peak travel periods. Of the 34 defined primary routes and branch operations in the study area, only six operate at any time during midday or evening hours. Only four of these - *Routes 1B - Dunn Loring Metro / Ballston Metro*, *1C - Fair Oaks Mall / Ballston Metro*, *2B - Fair Oaks Mall / Ballston Metro*, and *29K - George Mason University / Royal & Pendleton Streets* provide any midday service.

Moreover, even for those Metrobus routes which provide only AM and PM peak period operations, the average service frequency is typically only between 20 and 40 minutes. For those routes which operate during midday periods, headways are generally in the range of 30 to 60 minutes.

While the majority of the peak period routes provide "typical" commuter service, i.e., inbound towards Washington in the AM and outbound from Washington in the PM, several routes (e.g., 1C, 2G, 12D, 12M, 12, 17A, 17F, 20G, 20W, and 20Y) provide some level of "reverse commute" services linking the Ballston and Vienna Metrorail Stations with the emerging suburban employment centers in the Fair Oaks / Fair Lakes and Chantilly / Centreville areas. The service frequency on these "reverse commute" routes is typically only once every 40 minutes.

During the several year duration of the recently completed I-66 mainline widening and HOV lanes construction project between the area to the west of Route 29 at Centreville and the Capital Beltway, a free fare program was provided on those bus routes which used I-66 for some portion of their trip. With the completion of this portion of the I-66 widening / HOV lanes project, the fare on these feeder routes to the Vienna Metrorail Station was originally proposed to be increased to the regular system wide feeder route fare of \$0.50. However, through the use of additional funds provided by the Virginia Department of Rail and Public Transportation, a reduced fare program with a fare of only \$0.25 per ride will be maintained on these routes through at least June 30, 1998.

Table 1
CURRENT METROBUS OPERATIONS IN THE I-66 MIS STUDY AREA
(September, 1997)

Route Number / Terminals	AM Rush	PM Rush	Midday	Evening	Saturday	Sunday	Typical Weekday Frequency and Other Comments
1B - Dunn Loring Metro / Ballston Metro	●	●	●	●	●	■	Extended to Rosslyn Metro weekday midday
1C - Fair Oaks Mall / Ballston Metro	Out	In	●	●	●	■	Extended to Rosslyn Metro weekday midday
1D - Dunn Loring Metro / Ballston Metro	●	●	■	■	■	■	
1F - Fairfax Circle / Ballston Metro	●	●	■	●	●	●	
1Z - Fair Oaks Mall / Ballston Metro	In	Out	■	■	■	■	
2A - Dunn Loring Metro / Ballston Metro	In	■	■	■	■	●	(20/-)
2B - Fair Oaks Mall / Ballston Metro	In	Out	●	●	●	■	(30/60/30)
2G - Fair Oaks Mall / Ballston Metro	Out	In	■	■	■	■	(30/-30)
2W - Oakton / Vienna Metro Shuttle	In	Out	■	■	■	■	(30/-30); Special Fare (\$0.50)
12C - Centreville P&R / Vienna Metro	●	●	■	■	■	■	(35/-35); Special Fare (\$0.25) thru 6/30/98
12D - Centreville / Vienna Metro	Out	In	■	■	■	■	(35/-35); Special Fare (\$0.25) thru 6/30/98
12E - Centreville P&R / Vienna Metro	In	Out	■	■	■	■	(35/-35); Special Fare (\$0.25) thru 6/30/98
12F - Centreville Square P&R / Vienna Metro	Out	In	■	■	■	■	(35/-35); Special Fare (\$0.25) thru 6/30/98
12L - Little Rocky Run / Vienna Metro	In	Out	■	■	■	■	(35/-35); Special Fare (\$0.25) thru 6/30/98
12M - Centreville / Vienna Metro	Out	In	■	■	■	■	(25/-25); Special Fare (\$0.25) thru 6/30/98
12R - Sully Station / Vienna Metro	Out	In	■	■	■	■	(25/-25); Special Fare (\$0.25) thru 6/30/98
12S - Sully Station / Vienna Metro	In	Out	■	■	■	■	(20/-20); Special Fare (\$0.25) thru 6/30/98
15K - George Mason Univ. / Rosslyn Metro	●	●	■	■	■	■	
15L - George Mason Univ. / Rosslyn Metro	In	■	■	■	■	■	

17A - George Mason Univ. / Pentagon Metro	Out	In	■	●	■	■	
17F - Kings Park West / Pentagon Metro	Out	In	■	■	■	■	
17G - George Mason Univ. / Pentagon Metro	In	Out	■	■	■	■	
17H - Kings Park West / Pentagon Metro	In	Out	■	■	■	■	
17K - Kings Park West / Pentagon Metro	In	Out	■	■	■	■	
17L - Burke / Pentagon Metro	In	Out	■	■	■	■	
20A - Fair Oaks / Vienna Metro	●	●	■	■	■	■	(22/-/25); Special Fare (\$0.50)
20F - Franklin Farm / Vienna Metro	In	Out	■	■	■	■	(40/-/40); Special Fare (\$0.25) thru 6/30/98
20W - Chantilly / Vienna METRO	Out	In	■	■	■	■	(40/-/40); Special Fare (\$0.25) thru 6/30/98
20X - Chantilly / Vienna METRO	In	Out	■	■	■	■	(30/-/30); Special Fare (\$0.25) thru 6/30/98
20Y - Sullyfield Circle / Vienna METRO	Out	In	■	■	■	■	(40/-/40); Special Fare (\$0.25) thru 6/30/98
20Z - Sullyfield Circle / Vienna Metro	In	Out	■	■	■	■	Special Fare (\$0.50)
29K - George Mason Univ. / Royal & Pendleton Streets	●	●	●	●	■	■	
29N - Fairfax Circle / Royal & Pendleton Streets	●	●	■	Out	●	■	1 Evening Trip

Source: Washington Metropolitan Area Transit Authority; August, 1997

Legend: In = Inbound

Out = Outbound

● = Service Operated in Both Directions

■ = No Service Operated During Specified Time Period

(60/60/60) = AM Peak / Midday / PM Peak Service Frequency

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Fairfax Connector System

The Fairfax Connector system consists of a total of 43 bus routes providing service to six Metrorail stations in the northwestern and southeastern portions of Fairfax County. The current countywide system consists of three operating divisions: the Huntington Division in southeast Fairfax County, the Community Bus Service Division in the central part of the county, and the Reston-Herndon Division in northwest Fairfax County. At the present time, a total of 127 County-owned buses are required to operate these services. Private bus contractors are responsible for the day-to-day operations and the maintenance of the vehicles.

The Community Bus Service Division is presently responsible for the operations of the Vienna Feeder Service (Routes 402, 403, 404, and 20A), the Tysons Shuttle, and the Reston Internal Bus System (RIBS). Only Route 306, Route 401, the Vienna Metrorail Station Feeder (Routes 402/403), and Route 404 currently provide service within the I-66 MIS study area. The current boarding fare for Routes 306 and 404 are based on the Metrobus zone system. A trip in any one fare zone is thus \$1.10, with a supplemental rush hour charge of \$0.35 added for each additional fare zone boundary crossed. On Routes 402 and 403, the current fare is \$0.50 at all times.

Table 2 summarizes the current Fairfax Connector operations in the I-66 area. As shown on this table, only Route 401 - Springfield Mall to Tysons Corner Mall - operates continuously throughout the day, with a service frequency of once every 30 minutes during peak periods and once every 60 minutes during the remainder of the day. Routes 402/403 provide only AM and PM peak period feeder service to and from the Vienna Metro Station with a service frequency of once every 35-40 minutes; while Routes 306 and 404 operate only during midday periods, with headways of approximately 75 minutes. The current daily ridership on the Fairfax Connector routes operating in the I-66 MIS study area is summarized below.

<u>Fairfax County Connector Route</u>	<u>Average Daily Ridership (1)</u>
Route 306	126
Route 401	1,589
Routes 402/403	189
Route 404	97
Totals	2,001

(1) Data Source: Fairfax County Office of Transportation; Ridership during June-July, 1997

Table 2**CURRENT FAIRFAX CONNECTOR BUS OPERATIONS IN THE I-66 MIS STUDY AREA**

Route Number / Terminals	AM Rush	PM Rush	Midday	Evening	Saturday	Sunday	Typical Weekday Frequency and Other Comments
306 - George Mason Univ. To Pentagon Metro Station via Braddock Road	■	■	●	■	■	■	
401 - Springfield Mall to Tysons Corner Mall via Dunn Loring Metro Station	●	●	●	●	●	■	(30/60/30)
402/403 - Vienna Metro Station to Dunn Loring Metro Station via Town of Vienna	●	●	■	■	■	■	(35/-/40)
404 - George Mason Univ. To Rosslyn Metro Station via Vienna and McLean	■	■	●	■	■	■	(-/75/-)

Source: Fairfax County Office of Transportation; August, 1997

Legend: In = Inbound

Out = Outbound

● = Service Operated in Both Directions

■ = No Service Operated During Specified Time Period

(60/60/60) = AM Peak / Midday / PM Peak Service Frequency

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City of Fairfax CUE Bus System:

The City of Fairfax CUE Bus System operates two overlapping loop routes which connect the Vienna Metrorail Station with George Mason University and traverse the majority of the City of Fairfax. As shown on Figure 5, each of the two loop routes ("Gold" and "Green") operate in both directions, with "Gold-1" being the clockwise loop and "Gold-2" being the corresponding counter-clockwise loop.

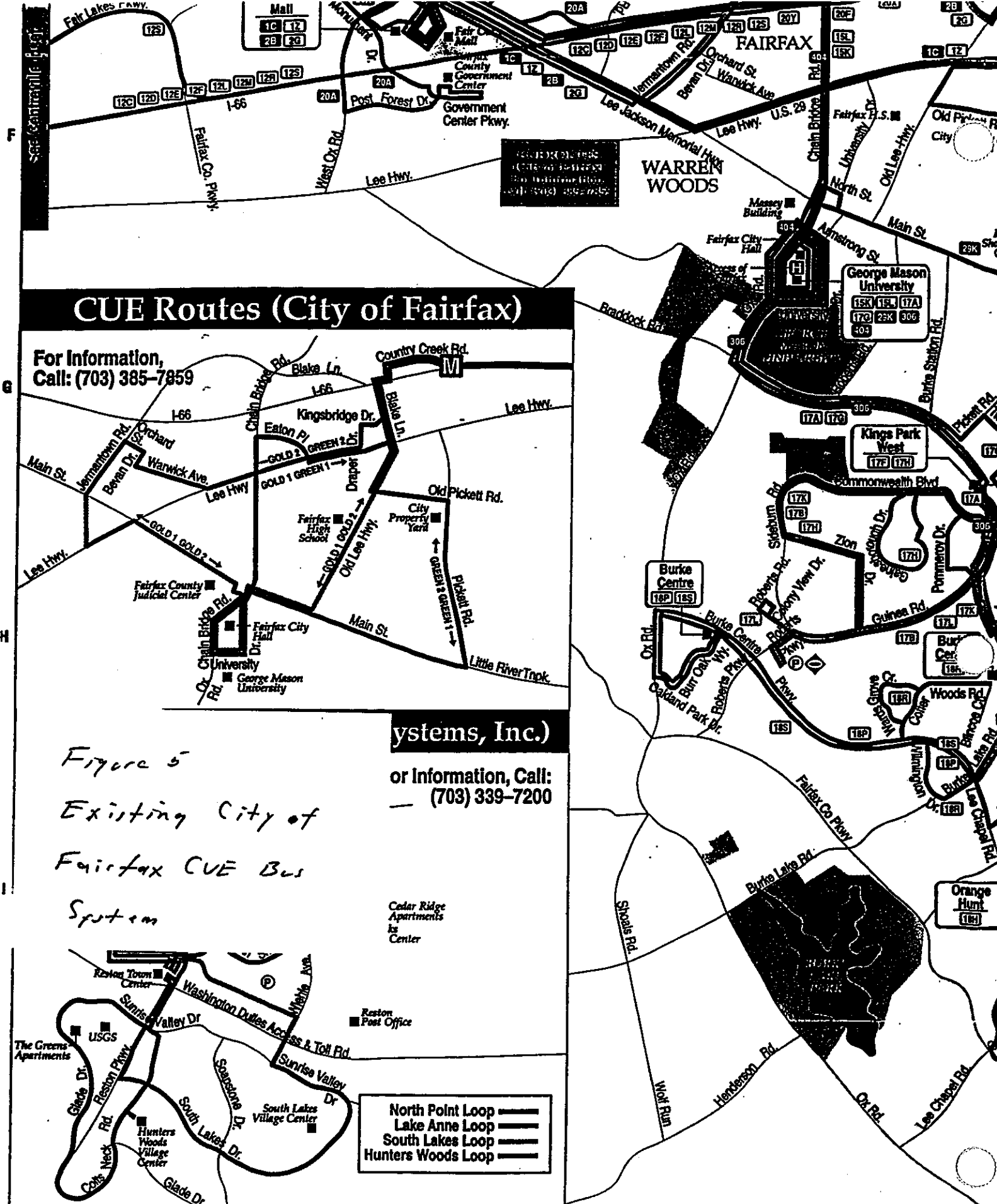
This service operates seven days a week, between the hours of approximately 5:30 AM and 12:00 Midnight. The typical service frequency is approximately once every 25-30 minutes during both the AM and PM peak periods and during midday hours. Evening service, after approximately 6:30 PM, is operated on an hourly frequency.

The system's operating costs are generated through a combination of passenger fares, City of Fairfax funds, and an operating subsidy provided by George Mason University. The regular fare is \$0.50, although all George Mason University students, faculty and staff may ride free upon presentation of valid University identification. A reduced fare of \$0.25 is charged to all high school students possessing a proper ID, all elementary and intermediate school students, and all senior citizens 60 years of age or older possessing a City issued pass.

OmniLink and OmniRide:

In association with Prince William County, the Potomac / Rappahannock Transportation Commission (PRTC) operates a group of public transportation services which are known collectively as OmniRide and OmniLink. OmniRide (formerly known as COMMUTERIDE) is a commuter bus service which offers conveniently scheduled weekday rush hour service from locations throughout Prince William County and the City of Manassas to destinations that include the *Vienna, West Falls Church and Franconia/Springfield Metrorail Stations* in Fairfax County, the Pentagon and the Crystal City area of Arlington County, and downtown Washington, D.C. The regular one-way fare on OmniRide routes to the Pentagon, Crystal City and Downtown Washington is \$5.00 with a ten-ride pack of tokens available for \$35.00. The fare for the shuttle service from Manassas and western Prince William County to the Vienna or West Falls Church Metrorail Stations is \$1.75 per trip, with a ten-ride pack of tokens available for \$17.50. Table 3-A presents the current OmniRide schedule from Manassas during the AM peak period, while Table 3-B presents the corresponding information for the PM peak period.

Complimenting these long-distance commuter bus operations are the OmniLink local services in the Cities of Manassas and Manassas Park. Figure 6 illustrates the routing and operating schedule of the Manassas OmniLink feeder service to the downtown Manassas VRE station, while Figure 7 illustrates the routing of the OmniLink local bus services in Manassas and



CUE Routes (City of Fairfax)

For Information,
Call: (703) 385-7859

systems, Inc.)

or Information, Call:
— (703) 339-7200

Figure 5
Existing City of
Fairfax CUE Bus
System

- North Point Loop
- Lake Anne Loop
- South Lakes Loop
- Hunters Woods Loop

DASH (Alexandria Transit Company)

For Information

to Pentagon

W. Gl.

Manassas to Vienna Metro, West Falls Church Metro and Pentagon/Washington

A.M. Service

	WFC-1	VS-1	M-1	WFC-2	M-2	VS-2	M-3	WFC-3	M-4	VS-3	WFC-4
Liberia & Centreville (Giant)	4:25	5:00	5:15	5:30	5:45	6:00	6:15	6:25	6:45	7:00	---
Prince William & Sully (VRE Station)	4:31	5:06	5:21	5:36	5:51	6:06	6:21	6:31	6:51	7:06	---
Sudley Rd. and Centreville (CVS)	4:35	5:10	5:25	5:40	5:55	6:10	6:25	6:35	6:55	7:10	---
Sudley Rd. & Diggsville (Shops/Gas)	4:38	5:13	5:28	5:43	5:58	6:13	6:28	6:38	6:58	7:13	---
Manassas Mall (Montgomery Wards)	4:44	5:19	5:34	5:49	6:04	6:19	6:34	6:44	7:04	7:19	12:15
Potomac Community Center	4:48	5:23	5:38	5:53	6:08	6:23	6:38	6:48	7:08	7:23	12:18
Sudley Manor Drive (K-Mart)	4:53	5:28	5:43	5:58	6:13	6:28	6:43	6:53	7:13	7:28	12:23
Williamson & General	4:54	5:29	5:44	5:59	6:14	6:29	6:44	6:54	7:14	7:29	12:24
Williamson & Stonehouse **	4:55	5:30	5:45	6:00	6:15	6:30	6:45	6:55	7:15	7:30	12:25

VIENNA METRO	5:59	---	---	---	---	7:00	---	---	---	---	---
WEST FALLS CHURCH METRO	5:30	---	---	6:40	---	---	---	7:35	---	---	1:00
(Southside, Kiss & Ride Area, Bus Bay F)	---	---	6:30	---	7:05	---	7:40	---	8:10	---	---
PENTAGON (EOT/5b)	---	---	---	---	---	---	---	---	---	---	---

14th & Independence (Agriculture Dept.)	---	---	6:36	---	7:11	---	7:46	---	8:16	---	---
14th & Community Center	---	---	6:37	---	7:12	---	7:47	---	8:17	---	---
14th & E	---	---	6:37	---	7:12	---	7:47	---	8:17	---	---
14th & New York	---	---	6:39	---	7:14	---	7:49	---	8:19	---	---
I & 15th (McPherson Square)	---	---	6:41	---	7:16	---	7:51	---	8:21	---	---
I & 14th (Farragut Square)	---	---	6:42	---	7:17	---	7:52	---	8:22	---	---
I & 18th (Farragut West Metro)	---	---	6:43	---	7:18	---	7:53	---	8:23	---	---
19th & 18th (World Bank)	---	---	6:44	---	7:19	---	7:54	---	8:24	---	---
19th & E (OPM)	---	---	6:45	---	7:20	---	7:55	---	8:25	---	---
C & 23rd (State Dept.)	---	---	6:47	---	7:22	---	7:57	---	8:27	---	---

Table 3-A

Omni Ride Manassas
Service - AM Peak

Washington/Pentagon, and West Falls Church Metro to Manassas

P.M. Service

	WFC-1	WFC-2	WFC-3	M-1	WFC-4	M-2	WFC-5	M-3	WFC-6	M-4	WFC-7
23rd & D (State Dept)	---	---	---	4:10	---	4:40	---	5:10	---	5:40	---
E & 20th (OPM)	---	---	---	4:13	---	4:43	---	5:13	---	5:43	---
18th & F	---	---	---	4:16	---	4:46	---	5:16	---	5:46	---
18th & H	---	---	---	4:18	---	4:48	---	5:18	---	5:48	---
H & Jackson Place	---	---	---	4:20	---	4:50	---	5:20	---	5:50	---
H & Madison Place	---	---	---	4:22	---	4:52	---	5:22	---	5:52	---
14th & New York (Stapucks)	---	---	---	4:25	---	4:55	---	5:25	---	5:55	---
14th at Commerce Dept. (Nat'l. Aquarium)	---	---	---	4:28	---	4:58	---	5:28	---	5:58	---
14th & Independence (Auditor's Bldg)	---	---	---	4:32	---	5:02	---	5:32	---	6:02	---

PENTAGON (Fem St)

	---	---	4:38	---	5:08	---	5:38	---	6:08	---
PENTAGON (Fem St)										
WEST FALLS CHURCH METRO	1:05	4:10	4:40	---	5:25	---	5:55	---	6:25	---
(Southside, Kiss & Ride Area, Bus Bay E)										7:15

Williamson & Stonehouse **

	1:40	4:45	5:15	5:28	6:00	5:58	6:30	6:28	7:00	6:58	7:50
Williamson & Emerald	1:41	4:46	5:16	5:29	6:01	5:59	6:31	6:29	7:01	6:59	7:51
Sudley Manor Drive (K-Mart)	1:42	4:47	5:17	5:30	6:02	6:00	6:32	6:30	7:02	7:00	7:52
Portsmouth Commerce Center	1:47	4:52	5:22	5:35	6:07	6:05	6:37	6:35	7:07	7:05	7:57
Manassas Mall (Montgomery Wards)	1:51	4:56	5:26	5:39	6:11	6:09	6:41	6:39	7:11	7:09	8:01
Prince William Hospital (Sudley Dr)	1:57	5:02	5:32	5:45	6:17	6:15	6:47	6:45	7:17	7:15	8:07
Prince William & S. Main (VRE Station)	2:00	5:05	5:35	5:48	6:20	6:18	6:50	6:48	7:20	7:18	8:10
Sudley Rd & Centreville	2:04	5:09	5:39	5:52	6:24	6:22	6:54	6:52	7:24	7:22	8:14
Liberia & Centreville (Giant)	2:10	5:15	5:45	5:58	6:30	6:28	7:00	6:58	7:30	7:28	8:20

** New Bus Stop (Curb Side On-Street Parking Available on Stonehouse Drive)

Please note that OmniRide bus service is not available from Vienna Metro in the evening.

T94/c 3-13

OmniRide Manassas

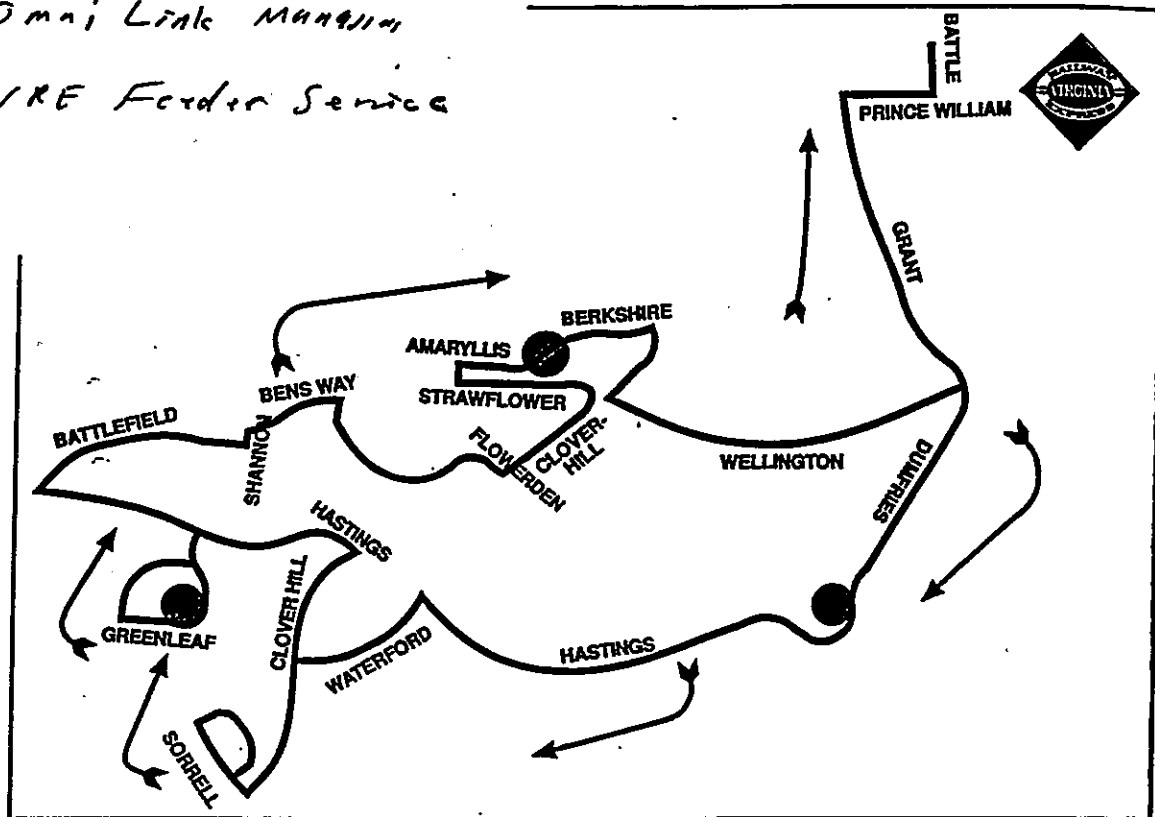
Service - pm peak

MANASSAS SCHEDULE

Figure 6

Omni Link Manassas

VRE Forder Service



MANASSAS

To Manassas VRE Train Station – Morning Trips

Train #	322	324	326	328	330
Dumfries Road at Hastings Drive	4:55 AM	5:27 AM	5:57 AM	6:27 AM	6:57 AM
Shannon at Greenleaf Drive	5:03 AM	5:35 AM	6:05 AM	6:35 AM	7:05 AM
Amaryllis Avenue at Wellington Road	5:09 AM	5:41 AM	6:11 AM	6:41 AM	7:11 AM
Arrive at Manassas VRE Train Station	5:15 AM	5:47 AM	6:17 AM	6:47 AM	7:17 AM
VRE Train Departs	5:25 AM	5:57 AM	6:27 AM	6:57 AM	7:27 AM

From Manassas VRE Train Station – Evening Trips

Train #	323	325	327	329	331
VRE Train Arrives	4:57 PM	5:27 PM	6:10 PM	6:39 PM	7:26 PM
Depart at Manassas VRE Train Station	5:02 PM	5:32 PM	6:15 PM	6:44 PM	7:31 PM
Amaryllis Avenue at Wellington Road	5:08 PM	5:38 PM	6:21 PM	6:50 PM	7:37 PM
Shannon at Greenleaf Drive	5:15 PM	5:45 PM	6:28 PM	6:57 PM	7:44 PM
Dumfries Road at Hastings Drive	5:23 PM	5:53 PM	6:36 PM	7:05 PM	7:52 PM

The map displays the Manassas Transit Authority's service area, which includes the city of Manassas and surrounding areas. Key locations and landmarks are marked, including Manassas Park, Manassas Shopping Center, Manassas City Hall, and Manassas Park United Service. The map also shows major roads and transit routes, with a legend on the left identifying symbols for the service area, Manassas, Manassas Park, Manassas Park United Service, and Manassas City Hall. A legend on the right identifies symbols for Manassas, Manassas Park, Manassas Park United Service, and Manassas City Hall.

Figure 7

0 min; Link Local

Service in Manassas &

Manas, 4, 1206

Manassas Park. Tables 4-A and 4-B, respectively, present the OmniLink operating schedules in the Cities of Manassas and Manassas Park.

Information provided by PRTC staff indicate that the average weekday ridership of these operations during the month of September, 1997 was as follows:

- For the 11 AM peak period eastbound bus trips, an average of 261 persons per day were transported, or approximately 24 persons on each bus.
- For the 12 PM peak period westbound bus trips, an average of 223 persons per day were transported, or approximately 19 persons on each bus.

Virginia Railway Express (VRE):

The Virginia Railway Express (VRE) is a relatively new commuter railroad service. It began operations in the summer of 1992, and is jointly administered by the Potomac-Rappahannock Transportation Commission (PRTC) and the Northern Virginia Transportation Commission (NVTC). The service operates along two routes: a north-south oriented line between Union Station in Washington, D.C. and Fredericksburg in Spotsylvania County, Virginia (the *Fredericksburg Line*) and an east-west oriented line between Union Station and the Broad Run / Airport Station just south of the City of Manassas in Prince William County (the *Manassas Line*). The western half of the Manassas line lies within the defined boundaries of the I-66 MIS study area. Figure 8 on the following page illustrates both a map of the VRE system and presents short descriptions of the location, amenities and parking facilities for each of the stations along the Manassas VRE Line. Table 5 presents both the current fare structure for the Manassas Line and the current operating schedule.

As shown on Table 5, VRE service is presently operated only on Mondays thru Fridays, with service provided predominantly in the northbound direction in the AM peak and in the southbound direction in the PM peak. The entire two-route system operates a total of 26 trains per day. At the present time (October, 1997), there are six (6) northbound and one (1) southbound VRE trains operated along the Manassas Line during the AM peak period, and six (6) southbound trains and one (1) northbound VRE train operated along this line during the PM peak period. In addition, two Amtrak operated long distance intercity trains (#50 - northbound and #51 - southbound) which serve the stations at Manassas and Alexandria, and Washington Union Station accept VRE tickets for travel between these points. However, these two Amtrak trains operate only on Sundays, Wednesdays, and Fridays, limiting their usefulness to weekday commuters.

Manassas Park

To Manassas Mall from Manassas Park City Hall

KEY STOPS ONLY

(See map for location of all stops)

First trip departs at 7:35am • Last trip departs at 5:20pm

1 MANASSAS PARK CITY HALL Departure Time	2 LOMOND DRIVE & MANASSAS DRIVE Departure Time	3 MANASSAS MALL Arrival Time
7:35 am	7:50 am	8:00 am
8:20 am	8:35 am	8:45 am
9:05 am	9:20 am	9:30 am
9:50 am	10:05 am	10:15 am
10:35 am	10:50 am	11:00 am
11:20 am	11:35 am	11:45 am
12:05 pm	12:20 pm	12:30 pm
12:50 pm	1:05 pm	1:15 pm
1:35 pm	1:50 pm	2:00 pm
2:20 pm	2:35 pm	2:45 pm
3:05 pm	3:20 pm	3:30 pm
3:50 pm	4:05 pm	4:15 pm
4:35 pm	4:50 pm	5:00 pm
5:20 pm	5:35 pm	5:45 pm

To Manassas Park City Hall From Manassas Mall

KEY STOPS ONLY

(See map for location of all stops)

First trip departs at 8:00am • Last trip departs at 5:45pm

3 MANASSAS MALL Departure Time	2 LOMOND DRIVE & MANASSAS DRIVE Departure Time	1 MANASSAS PARK CITY HALL Arrival Time
8:00 am	8:10 am	8:20 am
8:45 am	8:55 am	9:05 am
9:30 am	9:40 am	9:50 am
10:15 am	10:25 am	10:35 am
11:00 am	11:10 am	11:20 am
11:45 am	11:55 am	12:05 pm
12:30 pm	12:40 pm	12:50 pm
1:15 pm	1:25 pm	1:35 pm
2:00 pm	2:10 pm	2:20 pm
2:45 pm	2:55 pm	3:05 pm
3:30 pm	3:40 pm	3:50 pm
4:15 pm	4:25 pm	4:35 pm
5:00 pm	5:10 pm	5:20 pm
5:45 pm	5:55 pm	6:05 pm

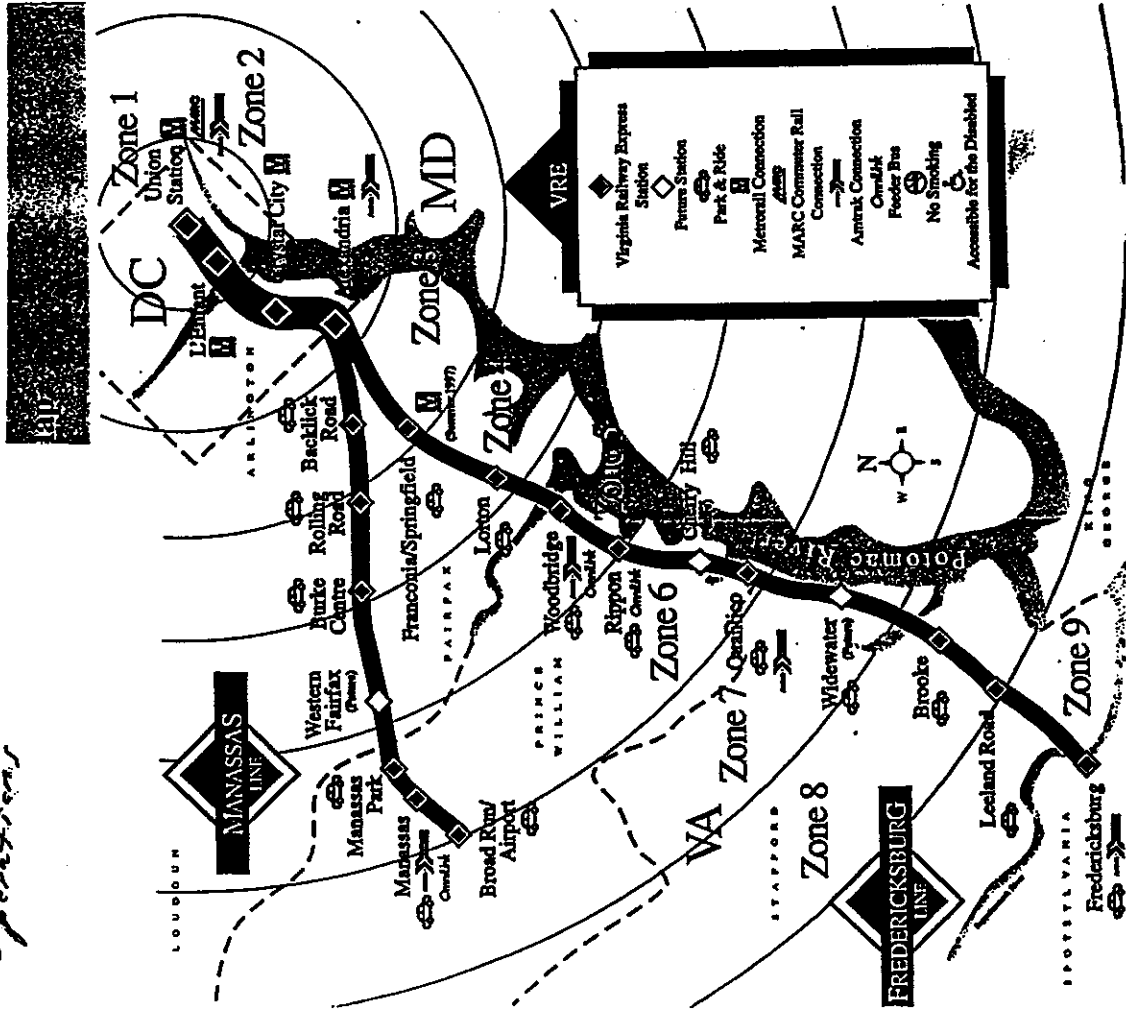
*These buses stop at Maplewood Center but DO NOT stop at Manassas Drive and Scott Drive.

Table 3-B

Manassas Park

Omni Link Service

Figure 8
VRE Manassas Line
Operations



Need Information? Want to Make a Suggestion?

Late train information, special events, comments—
all at your fingertips 24 hours a day, 365 days a year.

Call 703-658-6200 or 1-800-RIDE-VRE.

In Prince William and City of Manassas, call P.R.T.C. at 703-490-4811 ext. 2 for feeder bus information.

The Manassas Line Train Stops Here

Our stations are easy to find. Look for roadside directional signs.

Call these numbers for information on local transit connections to stations:
In Fairfax, Arlington, Alexandria and the District of Columbia: 1-800-745-RIDE (TTY 1-800-833-3232)
In Prince William, Manassas and Manassas Park: 703-490-4422 (TTY 1-800-828-1120)
In Stafford, Fredericksburg and Spotsylvania: 703-373-2890 (TTY 1-800-828-1120)

Broad Run/Airport

10637 Piper Lane, Manassas
Amenities: Ticket vending machines
(no cash), newspaper racks, bicycle racks,
pay phones.
Carbide vendor.
Parking: 300 spaces.
Local transit connections: Fairfax
Connector, Metrobus.
For parking information, please call
(703) 792-6820.

Backlick Road

6900 Hechinger Dr., Springfield
Amenities: Ticket vending machines
(no cash), newspaper racks, bicycle racks,
pay phones. Parking: 220 spaces.
Local transit connections: Fairfax
Connector, Metrobus.
For parking information, please call
(703) 324-1100.

Manassas

9451 West St., Manassas
Amenities: Ticket vending machines
(no cash), newspaper racks, bicycle racks,
pay phones.
Parking: 348 spaces.
Local transit connection: OmniLink.
For parking information, please call
(703) 257-4198.

Alexandria

110 Cullinan Dr., Alexandria
Amenities: Ticket vending machines
(no cash), newspaper racks, pay phones.
Tickets available for cash from Amtrak agents.
Parking: None.
Metrorail access: King Street Station
(Yellow & Blue Lines).
Local transit connections: DASH, Metrobus,
Patriot Connector.

Manassas Park

9300 Manassas Dr., Manassas Park
Amenities: Ticket vending machines
(no cash), newspaper racks, bicycle racks,
pay phones.
Parking: 300 spaces.
For parking information, please call
(703) 335-8920.

Crystal City

1503 South Crystal Dr., Arlington
Amenities: Ticket vending machines
(no cash), newspaper racks, pay phones.
No carbide vendor.
Parking: None.
Metrorail access: Crystal City Station
(Yellow & Blue Lines).
Local transit connections: Arlington
Trolley, Metrobus.

Burke Centre

5671 Roberts Pkwy., Burke
Amenities: Ticket vending machines
(no cash), newspaper racks, bicycle racks,
pay phones.
Parking: 400 spaces.
Local transit connections: Metrobus.
For parking information, please call
(703) 324-1100.

L'Enfant

6th & 7th St. at C Street S.W., Washington
Amenities: Ticket vending machines
(no cash), pay phones.
No carbide vendor.
Parking: None.
Metrorail access: L'Enfant Plaza Station
(Yellow, Blue, Orange & Green Lines).
Local transit connections: Metrobus.

Rolling Road

9016 Burke Rd., Burke
Amenities: Ticket vending machines
(no cash), newspaper racks, bicycle racks,
pay phones.
Parking: 400 spaces.
Local transit connections: Metrobus.
For parking information, please call
(703) 324-1100.

Union Station

60 Massachusetts Ave. N.E., Washington
Amenities: Ticket vending machines, pay
phones, waiting concourse, retail stores.
Tickets available for cash from Amtrak
agents. Metrorail Access: Union Station (Red
Line). Connections to: Amtrak, MARC.
Local transit connection: Metrobus.
For parking information, please call
(202) 698-1221.

Table 5

Current VRE-Manassas

Operating Schedule and

Fares

Manassas
Line Fares

		Zone 1 Union Station, L'Enfant	Zone 2 Crystal City, Alexandria	Zone 3, Backlick Rd.	Zone 4 Rolling Rd., Burke Centre	Zone 5 Western Fairfax (Future)	Zone 6 Manassas Pk. Manassas, Broad Run
Zone 6 Broad Run, Manassas, Manassas Pk.	Single-Ride	\$5.55	\$5.15	\$4.75	\$2.80	\$2.45	\$2.05
	Ten-Trip	\$47.05	\$43.70	\$40.40	\$23.80	\$20.50	\$17.20
	Monthly	\$162.60	\$151.15	\$139.65	\$82.35	\$70.85	\$59.40
Zone 5 Western Fairfax (Future)	Single-Ride	\$5.15	\$4.75	\$4.40	\$2.45		
	Ten-Trip	\$43.70	\$40.40	\$37.10	\$20.50		
	Monthly	\$151.15	\$139.65	\$128.20	\$70.85		
Zone 4 Burke Centre, Rolling Rd.	Single-Ride	\$4.75	\$4.40	\$4.00	\$2.05		
	Ten-Trip	\$39.55	\$36.30	\$33.10	\$16.95		
	Monthly	\$136.75	\$125.55	\$114.40	\$58.55		
Zone 3 Backlick Rd.	Single-Ride	\$4.40	\$4.00				
	Ten-Trip	\$36.30	\$33.10				
	Monthly	\$125.55	\$114.40				
Zone 2 Alexandria, Crystal City	Single-Ride	\$4.00	\$3.60				
	Ten-Trip	\$33.10	\$29.85				
	Monthly	\$114.40	\$103.20				
Zone 1 L'Enfant, Union Station	Single-Ride	\$3.60					
	Ten-Trip	\$29.85					
	Monthly	\$103.20					

Manassas Line Schedule

Northbound								AMTRAK
Train #	322	324	326	328	330	332	334	50
Frequency:	M-F	M-F	M-F	M-F	M-F	M-F	M-F	SU,W,F
Manassas	5:25	5:57	6:27	6:57	7:32	8:26	—	6:55p
Burke Centre	5:43	6:15	6:45	7:15	7:50	8:44	—	—
Backlick Road	5:53	6:26	6:56	7:26	8:01	8:54	—	—
Crystal City (D)	6:13	6:48	7:18	7:48	8:23	9:15	—	—
Union Station	6:28	7:05	7:35	8:05	8:40	9:31	7:00	8:10

Southbound								AMTRAK
Train #	321	51	323	325	327	329	331	333
Frequency:	M-F	SU,W,F	M-F	M-F	M-F	M-F	M-F	M-F
L'Enfant	—	—	4:02	4:32	5:12	5:43	6:32	7:32
Alexandria	7:10	11:49	4:16	4:46	5:26	5:57	6:45	7:45
Rolling Road	—	—	4:33	5:03	5:43	6:14	7:02	8:02
Manassas Park	—	—	4:51	5:21	6:03	6:34	7:21	8:21
Manassas	—	12:24	4:57	5:27	6:10	6:39	7:26	8:26
Broad Run/Airport	7:57	—	5:08	5:38	6:21	6:50	7:37	8:37

* Indicates Amtrak train, accepting VRE Ten-Trip and Monthly tickets only. No Single-Ride Tickets.

(D) = Stops only to discharge passengers; train may leave ahead of schedule when station work is completed.
Trains will only stop at stations where a time is indicated. Effective May 11, 1997.

Since its initiation in mid-1992, the total average daily VRE system ridership has increased from 3,668 persons in July of 1992 to 7,031 persons in July of 1997. The current system ridership during Fiscal Year 1996-97 is down somewhat from the historically high levels observed during Fiscal Year 1995-96, with the average daily ridership of about 7,057 persons during FY 96-97 being approximately 7.8% lower than the comparable value of 7,656 persons observed during FY 95-96. With respect to the Manassas Line, the average daily ridership in FY 95-96 was 3,272 persons as compared to an average of 3,195 persons per day during FY 96-97. Thus, the average daily patronage on the Manassas line only experienced about a 2.3% decrease, as opposed to the system wide decrease of approximately 7.8%.

PRTC and NVTC staff have attributed much of the recently observed ridership decline to major track and signal control maintenance operations which were being undertaken along both the Manassas and Fredericksburg lines by the CSX and Norfolk/Southern Railroads, over whose lines the VRE service is operated. With the completion of these activities in the Summer of 1997, and the associated elimination of service disruptions and operating delays, it is anticipated that average daily system ridership will rebound to approximately 7,260 passengers by June of 1998 and steadily increase to a level of approximately 8,300 passengers per day by June of 1999. If the Manassas Line were to continue to maintain its current share of the total system ridership of approximately 45%, the average daily ridership would be approximately 3,270 passengers by June of 1998, and approximately 3,740 passengers by June of 1999.

PARK AND RIDE FACILITIES:

There are a large number of park-and-ride lots located throughout the I-66 MIS study area to accommodate various types of ridesharing. A recent survey by the Virginia Department of Transportation's Northern Virginia District Office identified a total of almost 4,300 parking spaces available for ridesharing over the entire length of the I-66 corridor between I-81 at Front Royal in Clark County and the Capital Beltway (I-495). This excludes the parking facilities available at the Vienna and Dunn Loring Metrorail Stations and the parking areas associated with the VRE Manassas Line stations. Table 6 summarizes the current park-and-ride lots in the I-66 corridor within the confines of Fairfax, Prince William, and Fauquier Counties. It should be noted that the lot occupancy / space utilization values shown on this table are based upon occupancy counts taken during the months of July and August of 1997, and, thus, may not truly reflect the year round utilization of these facilities due to summer vacations. Figure 9 illustrates the general location of these facilities.

As shown on Table 6, there are a total of approximately 3,275 available park-and-ride spaces within the I-66 corridor in Fairfax, Prince William, and Fauquier Counties. Of this total, approximately 1,792 spaces (about 55 percent) are in Fairfax County, with an additional

Table 6
I-66 CORRIDOR PARK-AND-RIDE LOTS (August, 1997)

Park-and-Ride Lot Name	Location	No. of Spaces	No. Occupied	Pct. Utilization
Fairfax County				
Centreville Square - VDOT	Route 28 at U.S. Route 29	168	33	20%
Centreville United Methodist Church	New Braddock Road at Route 28	150	68	45%
Fair Oaks Mall, Areas G&H	US Rt.50 and Legato Rd. near I-66	150	30	20%
Fairfax County Government Center	Government Center Pkwy and Post Forest Drive	170	10	6%
Fairfax City Municipal	North Street at Old Lee Highway			ERR
Fair Lanes Bowling Center	13814 Lee Highway	33	5	15%
Greenbriar Park	Melville Lane near Stringfellow Road	60	8	13%
Greenbriar Shopping Center	U.S. Rt. 50 at Plaza Lane	20	15	75%
Kutner Park	U.S. Rt. 50 at Jermantown Road	40	0	0%
Nottoway Park, Town of Vienna	Courthouse Road near Nutley Street	14	7	50%
Poplar Tree Park	Stringfellow Road near Fair Lakes Parkway	279	0	0%
St. Paul's Church	Rippling Pond Drive and Fair Lakes Parkway	100	49	49%
Stone Road, Centreville	U.S. Rt. 29 at Stone Road	372	250	67%
Sully Station	Stonecroft Boulevard near Westfields Boulevard	140	14	10%
Truro Episcopal Church	North Street and Route 236, City of Fairfax	46	17	37%
University Shopping Center	Route 236 and Old Lee Highway	50	13	26%
Subtotals - Fairfax County		1,792	519	29%
Prince William County				
K-Mart at Sudley Square	Route 234 at Sudley Manor Drive	240	9	4%
Manassas Junction Mall	Route 28 at Liberia Avenue	84	23	27%
Manassas Mall	Route 234 at Route 668	200	51	26%
Manassas Mall - Rbdew Lane	Route 234 at Rbdew Lane	85	6	7%
NVCC - Manassas Campus	Route 234 off Battlefield Parkway, north of I-66	218	0	0%
Portsmouth Road Commuter Lot	Portsmouth Road and Williamson Boulevard	600	160	27%
Sudley Road & Godwin Drive	Route 234 and Digges Road			ERR
Subtotals - Prince William County		1,427	249	17%
Fauquier County				
Atoka Road	Atoka Road at U.S. Route 17 / State Route 55	10	5	50%
Markham	State Route 688 at I-66	12	8	67%
Marshall	Frost Road at State Route 55	34	16	47%
Subtotals - Fauquier County		56	29	52%
TOTAL - I-66 CORRIDOR		3,275	797	24%

Source: Virginia Department of Transportation

Note: Occupancy counts taken during June, July, and August, 1997.

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approximately 1,427 spaces (about 44 percent) located in Prince William County. The remaining 56 spaces are located in Fauquier County. The size of the various park-and-ride lots range from a low of approximately 10 spaces to a high of approximately 600 spaces. Although a large number of these commuter parking facilities (particularly the smaller lots) have existed for a number of years, several park-and-ride lots were recently constructed as part of the I-66 Congestion Management Program (CMP). This activity was initiated to help mitigate the construction related congestion impacts associated with the recently completed I-66 mainline and HOV widening projects from the Capital Beltway west to Route 234 at Manassas (Ref. 4). These latter facilities include:

- Stone Road - Centreville - 381 spaces - opened in August 1994;
- Centreville United Methodist Church - Centreville - 145 spaces - opened November, 1994; and
- Portsmouth Road - Manassas - 600 spaces - opened April, 1996 to replace the NVCC - Manassas lot (172 spaces) which was closed to commuter use in March, 1996.

The table on the following page has been excerpted from the Final Report for the I-66 Congestion Management Program Monitoring Project (Ref. 4) and summarizes the utilization of the major park-and-ride lots along the I-66 corridor which were served by express bus operations from the fall of 1994 through the spring of 1996. As noted on this table, the overall utilization rate of these lots varied from a low of 38.7% (in the January 1996 - June 1996 reporting period) to a high of 61.2% (in the March-May, 1995 and September - December, 1995 reporting periods). Several of the facilities, such as the NVCC - Manassas and the Centreville United Methodist Church lot, maintained very high occupancies throughout the entire period of the CMP, with the NVCC lot typically being in excess of 95% filled and the Centreville United Methodist Church lot generally being more than 80% filled.

Although parking for general ridesharing purposes is theoretically available at the VRE and Metrorail stations in the corridor, these lots are generally filled to capacity by persons using the VRE and Metrorail services, leaving very few, if any spaces for carpool and vanpool users.

HIGH OCCUPANCY VEHICLE (HOV) LANES

High Occupancy Vehicle (HOV) lanes are currently operated along the I-66 mainline during peak travel periods in the peak travel direction (eastbound in the AM and westbound in the PM) between the Route 234 interchange in Prince William County and Rosslyn in Arlington County.

Table 4-2
I-66 Corridor Park and Ride Lot Usage

Park-and Ride Lots	Baseline (1994)			First Quarter Data (Sep 94 - Nov 94)		Second Quarter Data (Dec 94 - Feb 95)		Third Quarter Data (Mar 95 - May 95)	
	Count May '94	Daily Capacity	Usage Rate	Count Sept. 28- Sept. 29	Usage Rate	Count Feb. 23 '95	Usage Rate	Count May 9 '95	Usage Rate
Stone Road-Centreville ¹		381		117	30.7%	160	42.0%	212	55.6%
Centreville Method Church ²		145		NA		81	55.9%	102	70.3%
Other Fairfax Lots	113	298	37.9%	80	26.8%	56	18.8%	73	24.5%
Manassas Mall	71	200	35.5%	117	58.5%	60	30.0%	106	53.0%
NVCC - Manassas	172	218	78.9%	187	85.8%	208	95.4%	214	98.2%
K-mart on Rte. 234	126	200	63.0%	180	90.0%	150	75.0%	176	88.0%
Total Park-and-Ride	482	916	52.6%	681	52.5%	715	49.6%	883	61.2%

Park-and Ride Lots	Fourth Quarter Data (Jun 95 - Aug 95)		Fifth Period Data (Sep 95 - Dec 95)		Sixth Period Data (Jan 96 - Jun 96)	
	Count Jul. 13 '95	Usage Rate	Count Nov. 1 '95	Usage Rate	Count Apr. 23 '96	Usage Rate
Stone Road-Centreville	185	48.6%	237	62.2%	245	64.3%
Centreville Method Church	127	87.6%	119	82.1%	122	84.1%
Other Fairfax Lots	63	21.1%	73	24.5%	70	23.5%
Manassas Mall	86	43.0%	86	43.0%	90	45.0%
NVCC - Manassas (Closed) ³	213	97.7%	218	100.0%	0	0.0%
K-mart on Rte. 234	130	65.0%	148	74.0%	150	75.0%
Subtotal Park-and-Ride	804	55.8%	881	61.1%	715	49.6%
Portsmouth Road (New Lot) ⁴					30	5.0%
Total Park-and-Ride						

Other Fairfax Lots - Sully Station; Centreville Square

¹ Opened August, 1994

² Opened November, 1994

³ Closed March, 1996

⁴ Opened April, 1996

Source: VDOT Park-n-Ride Checks

Outside of the Capital Beltway, the current AM peak period is defined as 5:30 AM to 9:30 AM and the PM peak period is defined as 3:00 PM to 7:00 PM. During these time periods, the current HOV definition is 2 or more persons per vehicle. The HOV operations are provided in three different ways over the length of the corridor:

- Between the Route 234 and U.S. Route 50 interchanges, the HOV lane uses the existing far-left side (median) general use travel lane in the concurrent flow direction. This results in the mid-day and off-peak direction 4-lane roadway cross-section becoming 3 lanes for general use traffic and one lane for HOVs.
- Between the U.S. Route 50 and Capital Beltway (I-495) interchanges, the HOV lane uses the existing far-left side (median) general use travel lane in the concurrent flow direction, with the displaced general use traffic being allowed to use the strengthened shoulder area as a travel lane. This results in the mid-day and off-peak direction 3-lane cross-section becoming 3 lanes for general use traffic and one lane for HOVs.
- Inside the Capital Beltway, the entire I-66 roadway is restricted to use by buses and other HOVs in the peak travel direction during the defined peak travel hours. In addition, trucks are prohibited from the use of the section of I-66 inside the Capital Beltway at all times, 24-hours a day, 365 days a year.

Table 7 presents a summary of the utilization of the I-66 HOV lanes on the section of the facility between the Route 7100 (Fairfax County Parkway) and U.S. Route 50 interchanges. This information reflects the use of the HOV lanes in both the AM peak (eastbound) and PM peak (westbound) time periods during September of 1996. As shown on Table 7, there were a total of 18,925 vehicles carrying 25,247 persons during the four hour duration AM peak period, and 20,128 vehicles carrying 28,211 persons during the four hour duration PM peak period. The single concurrent flow HOV lane carried 3,890 vehicles (20.6% of the total) and 9,245 persons (36.6% of the total) during the AM peak period, for an average vehicle occupancy in the HOV lane of 2.38. During the PM peak period, the HOV lane transported 3,187 vehicles (15.8% of the total) and 8,056 persons (28.6% of the total), with an average vehicle occupancy in the HOV lane of 2.53.

It is interesting to note that during both peak periods there were significant numbers of non-HOV vehicles using the HOV lane, approximately 25.3% in the AM peak period and approximately 17.8% in the PM peak period. Excluding these HOV "violators" from consideration, the average vehicle occupancy in the HOV lane increases to 2.84 in the AM peak period and to 2.86 in the PM peak period. Taking into account all of the 2+ occupant vehicles in the traffic stream (both in the HOV lane and in the other general traffic lanes), HOVs transport 37.6% of the total persons in

Table 7
CURRENT UTILIZATION OF I-66 HOV LANES

Lane	AM Peak Period (5:30 AM - 9:30 AM)			PM Peak Period (4:00 PM - 7:00 PM)			Total HOV Usage		
	Vehicles	Persons	Veh. Occ.	Vehicles	Persons	Veh. Occ.	Vehicles	Persons	Veh. Occ.
1 (HOV 2+)	3,890	9,245	2.38	3,187	8,056	2.53	7,077	17,301	2.44
2	5,660	6,124	1.08	6,376	7,523	1.18	12,036	13,647	1.13
3	5,235	5,573	1.06	5,523	6,221	1.13	10,758	11,794	1.10
4	4,140	4,305	1.04	5,042	6,411	1.27	9,182	10,716	1.17
Totals	18,925	25,247	1.33	20,128	28,211	1.40	39,053	53,458	1.37
Non HOV users in HOV lane	986	986	1.00	567	567	1.00	1,553	1,553	1.00
Actual HOV Lane Veh. Occ.	2,904	8,259	2.84	2,620	7,489	2.86	5,524	15,748	2.85
Total HOV Usage (incl. HOVs in general use lanes)	3,166	9,488	3.00	4,042	12,125	3.00	7,208	21,613	3.00
HOV as Pct. of Facility Total	16.7%	37.6%	NA	20.1%	43.0%	NA	18.5%	40.4%	NA

Location: Between VA Route 7100 and U.S. Route 50 Interchanges

Date of Count: September 18, 1996

Source: Virginia Department of Transportation

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the AM peak period in only 16.7% of the total vehicles. Similarly, in the PM peak period, the total HOVs transport 43.0% of the total persons in only 20.1% of the total vehicles.

These findings clearly demonstrate a high level of HOV usage in the I-66 corridor. This is in spite of the fact that, particularly to the east of the Route 50 interchange, the roadway geometry associated with the HOV 2+ lane (i.e., no buffer or physical separation of the lane from general traffic lanes and the absence of any dedicated HOV entry / exit ramps other than from EB I-66 to NB I-495) are not conducive to providing a significant travel time savings relative to single occupant vehicles.

NEED FOR PROJECT

The I-66 corridor is one of the most important east-west oriented transportation corridors in the Northern Virginia region. The corridor provides an essential connection between the Washington, D.C. metropolitan area and central and southwestern Virginia, from both the personal transport and goods movement perspectives. I-66 also provides a connection to the Midwest region via I-81 and I-64 and to the southeastern United States via U.S. Route 29, I-81, and I-77.

Substantial freight traverses the corridor, using both the highway and railroad facilities. Based upon somewhat limited and dated information from the late 1980s and early 1990s, it appears that trucks represent between approximately 6% and 17% of the total average daily traffic stream along I-66, with the lower percentages found in the more urbanized areas east of Route 50 and the higher percentages found in the more rural areas to the west of Route 234 at Manassas. Similarly, trucks represent between about 4% of the total traffic stream on U.S. Route 29 east of the City of Fairfax and about 13% of the total traffic stream along Route 29 to the west of the I-66 interchange at Gainesville. The double-track Norfolk-Southern rail line running through the southern portion of the corridor on which VRE commuter rail trains are operated is the Norfolk-Southern's mainline trackage between the northeastern United States and the south.

The I-66 corridor also serves a major commuter market shed, stretching from the Capital Beltway (I-495) on the east to the I-81 corridor in Clarke County on the west and along the U.S. Route 29 corridor to the southwest into Fauquier and Culpeper Counties. The residents of this travel shed work throughout the Washington Metropolitan Region, including: the District of Columbia; the Maryland suburban counties; the "inner" Virginia jurisdictions of Arlington, Alexandria, and Falls Church; and the Northern Virginia regional employment centers in Fairfax and Prince William Counties located at Tysons Corner, Merrifield, Fair Lakes / Fair Oaks, Reston / Herndon, Dulles International Airport, and Manassas.

The resulting travel patterns are thus quite diverse, and include both a small number of very long distance trips, such as those from areas to the west of Haymarket to the downtown Washington core, and many more shorter distance trips (such as along Route 28 between Centreville and Chantilly), where the latter trips may not even use I-66 or any of the parallel east-west oriented arterial routes. In addition, the corridor represents one of the primary travel paths from the population centers of the Washington Metropolitan Area to recreational centers located in western and central Virginia and the State of West Virginia, and to historic resources located within or near the defined corridor boundaries, such as the Manassas National Battlefield Park and Skyline Drive / Blue Ridge Parkway.

The importance of the I-66 corridor is evident by both the diversity of travel modes existent in the defined study area and the observed magnitude of travel demand using the existing facilities and services. As discussed previously, the I-66 MIS corridor is currently served by a variety of transportation modes (including interstate highways, arterial and secondary streets and highways, high-occupancy vehicle lanes, commuter rail (VRE), rail rapid transit (Metrorail), and bus services) and intermodal opportunities (including park-and-ride lots and the Vienna and Dunn Loring Metrorail Stations).

However, even with this existing complex transportation system, current operating conditions, particularly on the highway system, are generally viewed as being unacceptable, from a level of service perspective, at many locations within the defined project area during both peak and off-peak periods. For example, the I-66 Congestion Management Program Final Report (Ref. 4) reported that average eastbound travel speeds during the AM peak period in the fall of 1995 along the section of I-66 between the U.S. Route 29 interchange at Centreville (Exit 52) and the U.S. Route 50 interchange at Fair Lakes (Exit 57), with only two general use lanes provided during the reconstruction of this section, were only about 22 miles per hour. By comparison, the 1994 Highway Capacity Manual (Ref. 5) indicates that average travel speeds lower than about 50 miles per hour represents Level of Service "F" or "Failure" conditions on a 6-lane freeway facility.

Even with the recent completion of the HOV lane and I-66 mainline widening reconstruction project between Route 234 and the Capital Beltway, the MWCOC's recently completed study of traffic quality on the Metropolitan Washington Area Freeway System (Ref. 6) determined that it is not uncommon for eastbound AM peak period drivers along I-66 to encounter "stop-and-go" conditions every day of the week all the way from the I-66 / Route 50 interchange east to the Capital Beltway, a distance of over seven miles. Similarly, westbound drivers using I-66 during the PM peak period daily encounter congested traffic conditions from just west of the Capital Beltway (I-405) interchange west to vicinity of the I-66 / U.S. Route 50 interchange.

These currently observed problems can only be expected to become more severe as continued growth in both population and employment take place throughout the Northern Virginia region and the rest of the Washington Metropolitan area over the next 20-25 years.

An analysis of current and projected future traffic volumes reveals that the total I-66 MIS corridor has four relatively distinct components. These components differ in terms of both their physical characteristics and the type of traffic service provided, and thus differ in terms of need for potential improvement as well. These corridor components are illustrated on Figure 10 and are defined below:

- East Corridor - From the Capital Beltway (I-495) to U.S. Route 50: This area encompasses the Town of Vienna, the City of Fairfax, and portions of eastern and



***Traffic Quality on the
Metropolitan Washington Area
Freeway System***

FINAL REPORT

Spring 1996

***Prepared by
Skycomp, Inc., Rockville, Maryland
for the Metropolitan Washington Council of Governments***

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does not necessarily reflect the views of the sponsoring agencies.***

WESTBOUND



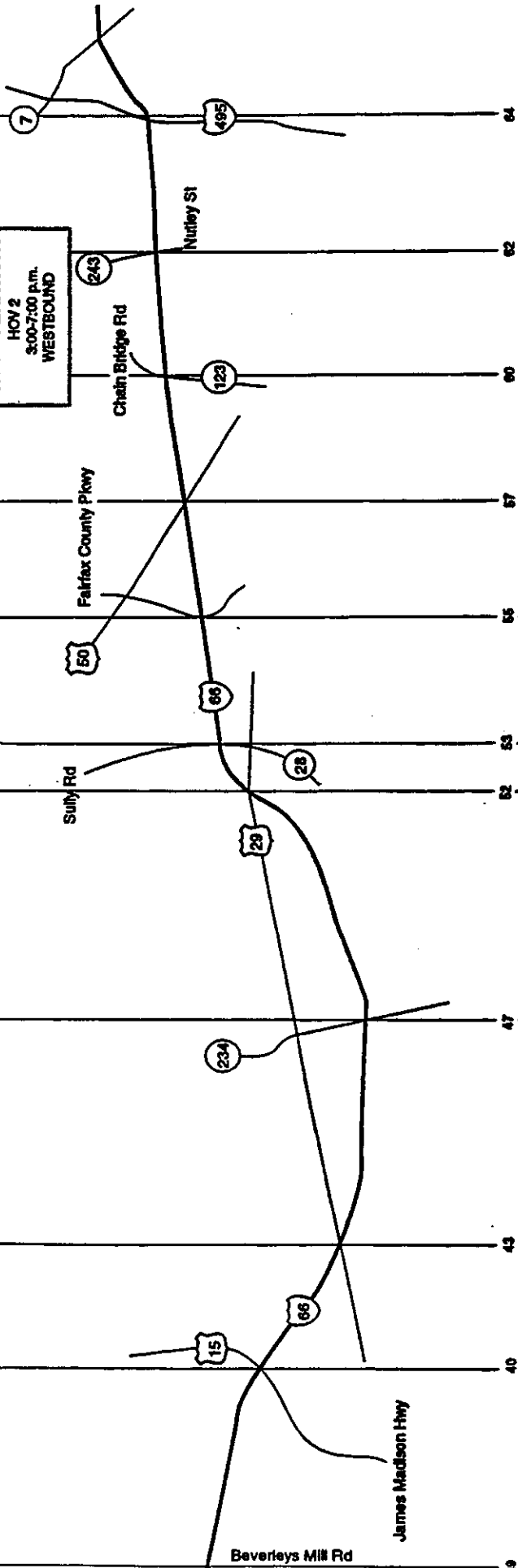
I-66 (VA) EVENING (SPRING 1996)

WESTBOUND

A	C	C	F(50)	E	D	C	F(45)	E	D	4:30-5:30 p.m.
B	C	C	F(45)	D	D	C	F(50)	D	E	5:30-6:30 p.m.
A	A	B	C	B	C	B	E	E	F(50)	6:30-7:30 p.m.
				B	B	B	C	B	C	6:30-7:00 p.m.

FOR EACH HOUR, HOV DATA (LEFT LANE) SHOWN BELOW DASHED (---) LINES

HOV OPERATIONS
HOV 2
3:00-7:00 p.m.
WESTBOUND



EASTBOUND

A	A	B	C	A	B	A	D	E	D	4:30-5:30 p.m.
A	A	B	B	A	A	A	D	D	D	5:30-6:30 p.m.
A	A	A	B	A	A	A	D	D	E	6:30-7:30 p.m.

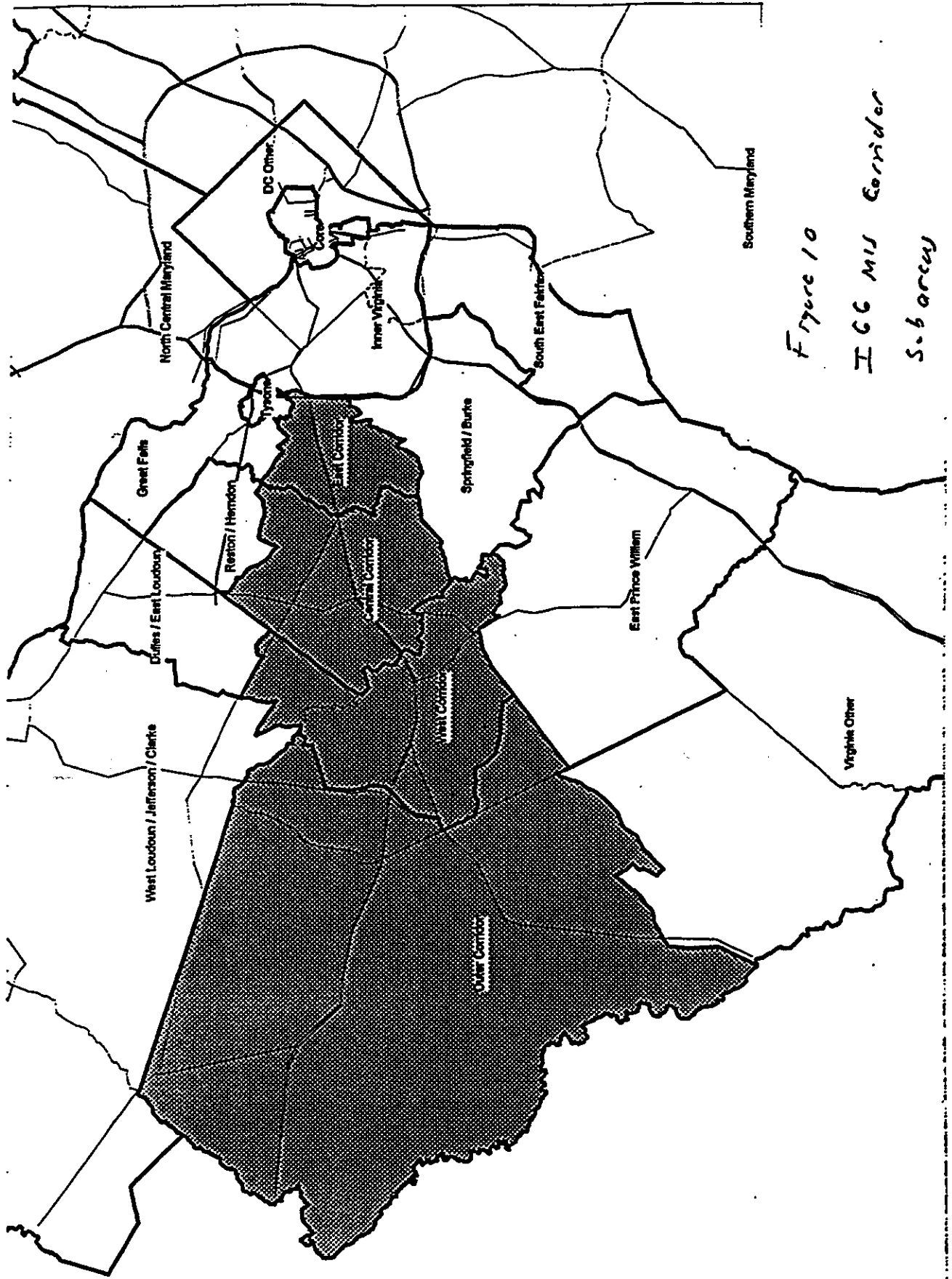


Figure 10
I-66 MVA Corridor
Subarea

central Fairfax County, and represents the most highly developed portion of the study corridor at this time. The travel conditions along this section of the corridor are expected to worsen by the year 2020 due to projected increases in population and employment along this portion of the corridor, and the projected expansion of suburban residential, commercial, and office development into those portions of Fairfax, Loudoun, Prince William, and Fauquier Counties which define the western portion of the study area. The primary needs of this segment of the corridor are to relieve existing traffic congestion and to provide sufficient multi-modal capacity to adequately accommodate projected future travel demands.

- Central Corridor - From Route 50 west to the Fairfax County line: This area encompasses the rapidly developing areas of western Fairfax County, including Fair Oaks/Fair Lakes, Centreville, and Chantilly. Although traffic volumes in this portion of the corridor are typically not as high as those to the east of the U.S. Route 50 / I-66 interchange, congestion is still a problem, and continues to expand in response to the continuing suburbanization of this portion of the region. The primary needs of this segment of the corridor are to alleviate existing traffic congestion and to provide sufficient multi-modal capacity to adequately accommodate projected future travel demands.
- West Corridor - From the Fairfax County / Prince William County Line west to U.S. Route 15: This includes the City of Manassas / Manassas Park area and a portion of southeastern Loudoun County. The preservation of existing system capacity and the provision of sufficient new capacity to accommodate projected travel demands are major considerations here.
- Outer Corridor - From Route 15 west to the western Fauquier County Line: This encompasses much of western Prince William County, most of Fauquier County, and a portion of southern Loudoun County. This portion of the corridor effectively functions as two divergent sub-corridors: the I-66 rural freeway facility from Route 15 at Haymarket west to Fauquier County and beyond to Front Royal and the I-81 corridor; and the U.S. Route 29 multi-lane highway facility from I-66 at Gainesville south to Warrenton in Fauquier County. The primary area of emphasis here is likely to be along the Route 29 sub-corridor, and relates to the need to both alleviate currently observed and projected traffic congestion, and to provide access control for the safe and efficient access to long-term development as it occurs, particularly in Prince William and Fauquier Counties.

REGIONAL GROWTH AND LAND USE PATTERNS

Residential and employment growth within the I-66 MIS project area are both expected to increase significantly over the next 20-25 years, continuing the patterns established over the past several decades. For example, over the period 1980-1995, Fairfax County alone contributed 31.4% of the total regional population growth of the entire Washington region over that period of 900,800 persons. Similarly, Prince William and Loudoun Counties combined to account for an additional 16.2% of the region's population growth over this period. Although the regional growth rate is projected to slow somewhat over the next 20 years in comparison to that observed over the past two decades, it is still estimated that the region will add approximately 750,000 persons over that period. It is further anticipated that about 50% of this total projected regional growth will take place in Fairfax, Loudoun, and Prince William Counties. Moreover, it is those areas in western Fairfax County, eastern Loudoun County, and western Prince William County which constitute the I-66 corridor study area that are anticipated to absorb most of this population growth (Ref. 7).

The current population of the I-66 MIS study area is estimated to be approximately 269,000 persons. The most recent regional socio-economic projections (Version 5.3) by the Metropolitan Washington Council of Governments (MWCOC) anticipate that the study area population in the year 2020 will be approximately 466,000 persons, representing about a 73% increase over current levels (Ref. 8).

Figures 11-A and 11-B illustrate, respectively, the projected change in the number of households in the I-66 study area between 1990 and 2020, and the total households in the area in the year 2020. As illustrated on these two figures, a very large portion of the anticipated household growth is projected to take place in those areas of western Fairfax County south of Route 50, in southern Loudoun County south of Route 50, and in western Prince William County to the west of Route 28; in other words, within the defined boundaries of the I-66 Major Investment Study.

Similar changes have been observed for employment growth as well. Over the period from 1980-1997, employment in Fairfax County more than doubled, from 210,700 jobs to 507,000 jobs, or a change of 141%. During this same period, employment throughout the Washington Metropolitan Region increased by only approximately 57%, from 1,637,800 jobs in 1980 to 2,564,650 jobs in 1997. Thus, over this period of time, the employment growth in Fairfax County alone represented 32% of the total job growth in the entire region (Ref. 8).

Between now and the year 2020, region wide employment is projected to increase by approximately 34%, from 2,564,650 jobs in 1997 to 3,428,686 jobs in 2020. Over this same time period, employment in Fairfax County is projected to reach a total of approximately 719,400 jobs,

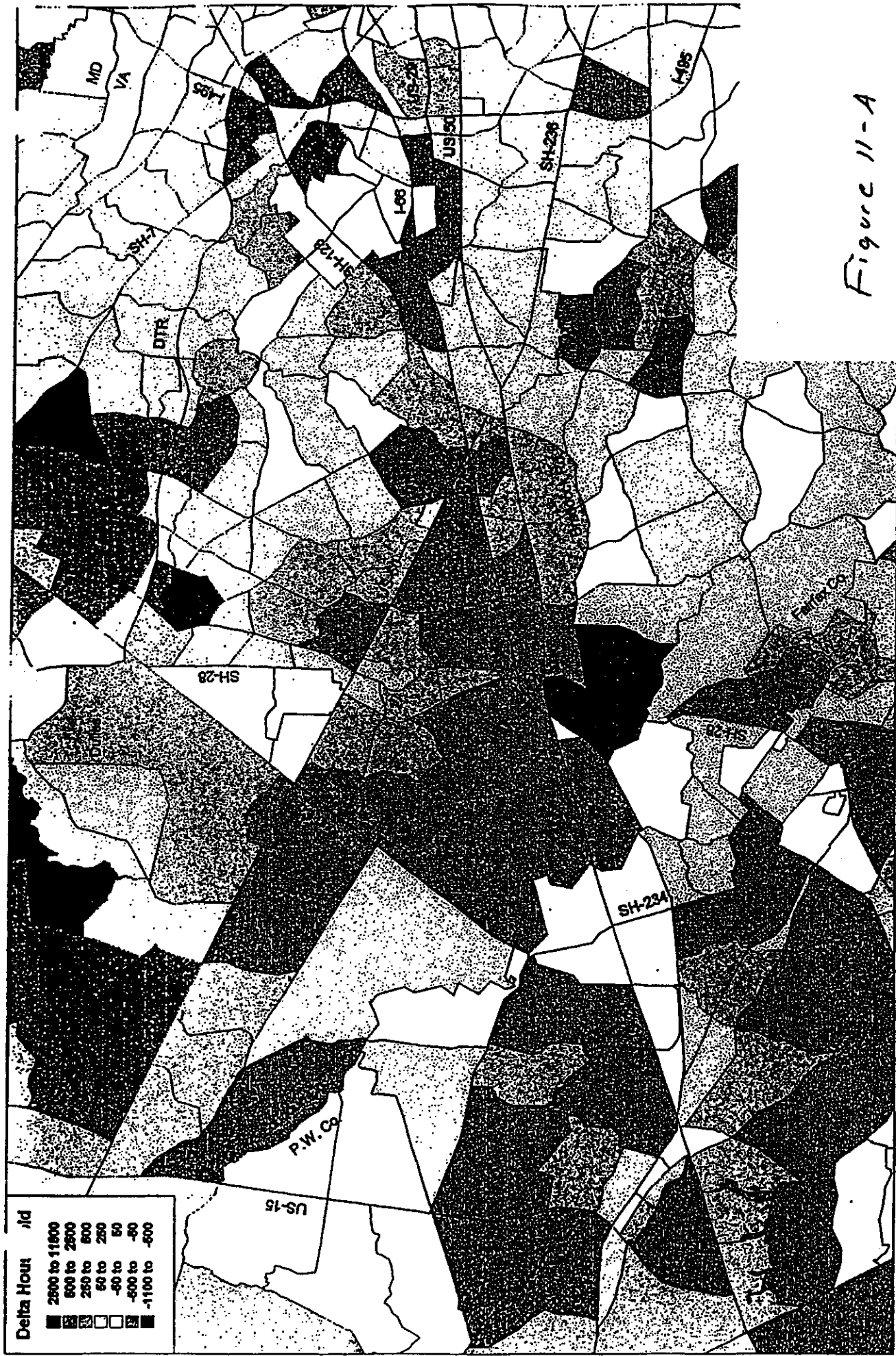


Figure 11-A

Source: Dulles Corridor Transportation Study; Adapted from M/WCOG Cooperative Forecasts, Round 5.2

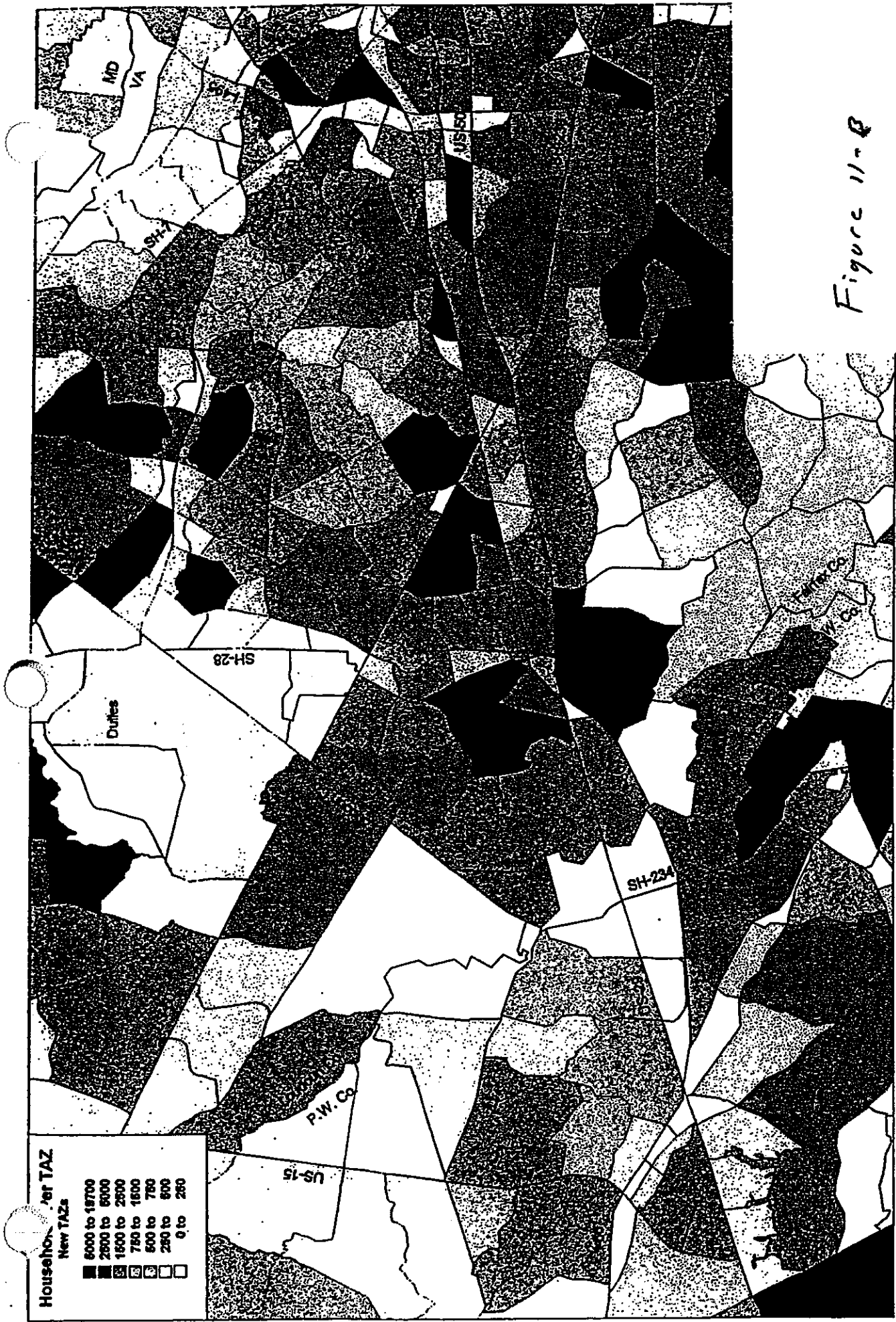


Figure 11-B

Source: Dulles Corridor Transportation Study; Adapted from MWCOC Cooperative Forecasts, Round 5.2

or about a 42% increase over current levels. Employment growth in Prince William and Loudoun Counties is projected to be even more dramatic, with Prince William County gaining approximately 85,000 jobs (an 83% increase over 1997 levels) and Loudoun County gaining approximately 56,500 jobs (an increase of about 116% over current levels). Within the I-66 study area, total employment is projected to increase from today's level of 162,000 jobs to approximately 296,000 jobs by the year 2020. This represents about an 83% increase over current levels (Ref. 8).

Figures 12-A and 12-B, respectively, illustrate the projected changes in the number of jobs in the I-66 study area between 1990 and 2020, and the total number of jobs by small area of the corridor in the year 2020. Not surprisingly, the majority of the corridor area employment in the year 2020 is anticipated to be found in the Fair Oaks / Fair Lakes, Chantilly, Centreville, and the City of Manassas / City of Manassas Park portions of the study area. Once again, the majority of the projected growth in employment is anticipated to take place within the defined boundaries of the study area.

TRAVEL DEMAND

Historically, Average Daily Traffic (ADT) volumes have been steadily increasing on all of the major roadways in the project area. Tables 8-A, 8-B, and 8-C, respectively, summarize the observed changes in traffic volume over the period 1985-1996 for the major east-west highways, the major north-south highways, and a representative sample of the secondary highways in the study area. As shown on these tables:

- Over the eleven year period from 1985 to 1996, traffic volumes along individual segments of the I-66 mainline west of the Capital Beltway increased anywhere from 39% to 121%, with a maximum volume of approximately 196,000 vehicles per day observed on the segment between Nutley Street (Route 243) and the Capital Beltway (I-495) in the year 1996.
- Volume increases along U.S. Route 29 and U.S. Route 50 within the study area showed a similar variability, ranging from 26% to 97% along Route 29, and from 10% to 103% along Route 50. The maximum volume along Route 29 of 50,000 vehicles per day was observed in 1996 just south of the I-66/Route 29 interchange at Gainesville, while the maximum volume along Route 50 of 70,000 vehicles per day was observed in 1996 between West Ox Road (Route 608) and the I-66/Route 50 interchange just west of the City of Fairfax.

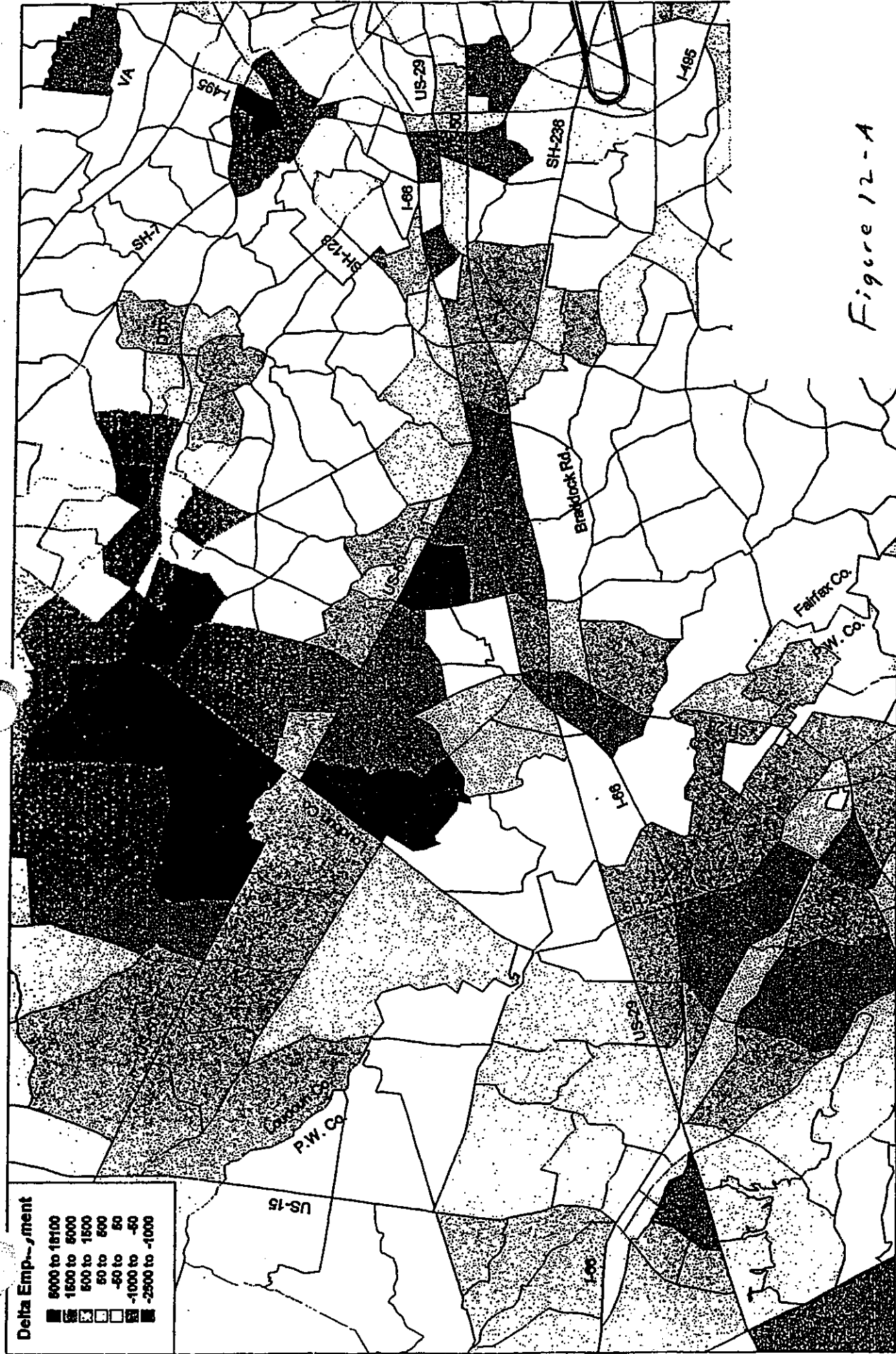


Figure 12-A

Source: Dulles Corridor Transportation Study, Adapted from MWCOG Cooperative Forecasts, Round 5.2

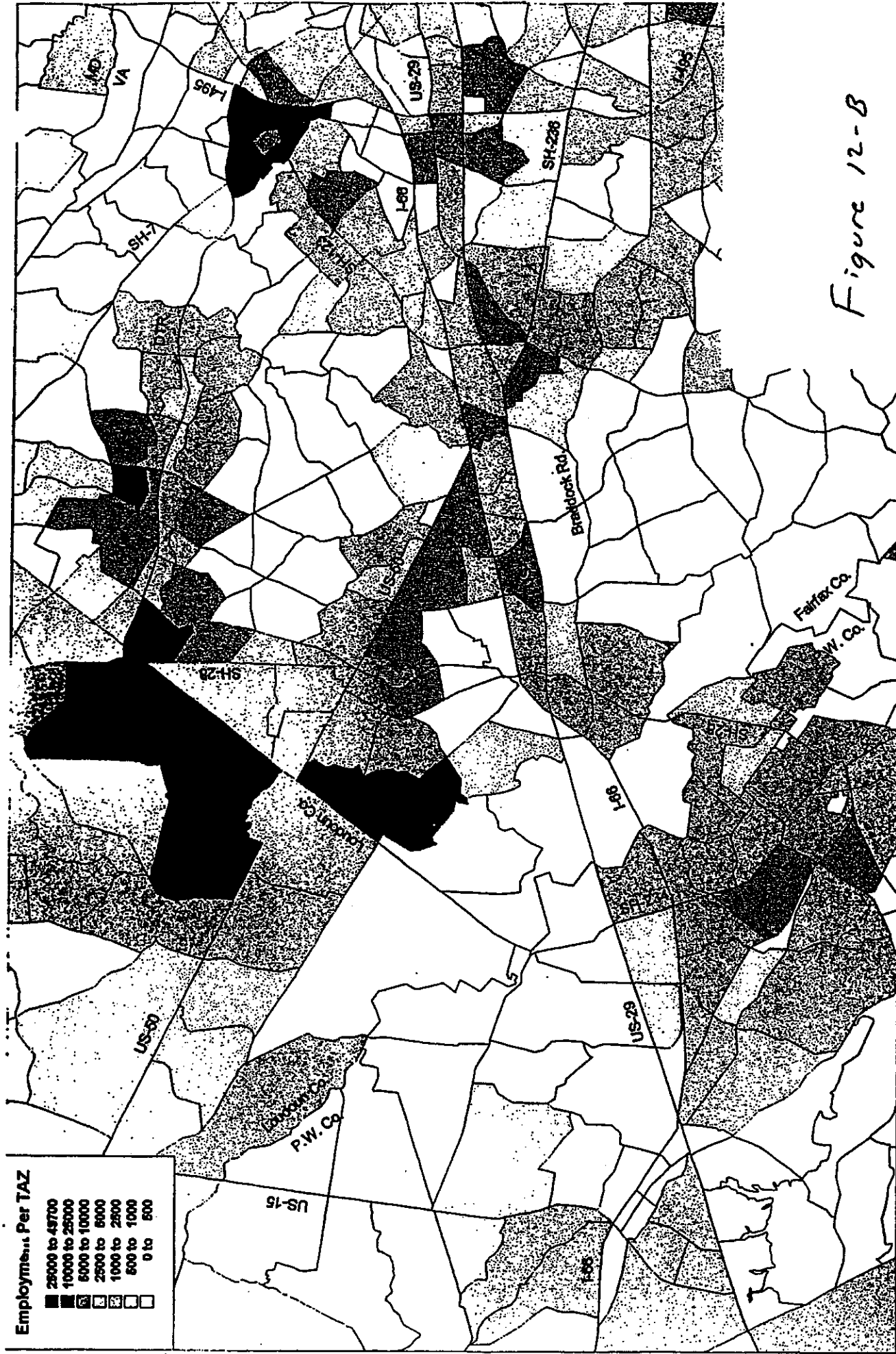


Figure 12-B

Sources: Dulles Corridor Transportation Study; Adapted from MWCOC Cooperative Forecasts, Round 5.2

I-66 Major Investment Study



2020 Employment per TAZ-
Ne AZ System

Table 8-A
HISTORICAL TRAFFIC VOLUMES ON EAST-WEST FACILITIES IN THE I-66 CORRIDOR

Highway Facility and Segments		Average Daily Traffic Volume											Pct. Change
		1985	1986	1989	1980	1991	1992	1993	1994	1995	1996	1985 - 1996	
From	To												
Interstate Route 66													
Rt 245 - The Plains	Rt 15 - Haymarket	12,690	16,840	17,720	20,310	20,000	22,000	26,000	26,000	27,000	28,000	120.6%	
Rt 15 - Haymarket	Rt 29 - Gainesville	13,660	19,105	20,035	26,025	25,000	24,000	25,000	28,000	28,000	29,000	112.3%	
Rt 29 - Gainesville	Rt 234 - Manassas	28,910	38,070	40,040	39,270	45,000	47,000	49,000	51,000	53,000	55,000	90.2%	
Rt 234 - Manassas	Rt 29 - Centreville	44,020	57,910	61,000	59,790	75,000	77,000	80,000	82,000	84,000	86,000	95.4%	
Rt 29 - Centreville	Rt 28 - Centreville	42,350	55,345	58,320	58,420	75,000	80,000	84,000	86,000	88,000	90,000	112.5%	
Rt 28 - Centreville	Rt 7100 - F.Co. Pkwy.	58,960	82,170	86,760	86,960	81,000	85,000	90,000	88,000	91,000	93,000	57.7%	
Rt 7100 - F.Co. Pkwy.	Rt 50 - Fair Oaks	58,960	82,170	86,760	86,960	81,000	85,000	90,000	92,000	94,000	96,000	62.8%	
Rt 50 - Fair Oaks	Rt 123 - Fairfax	87,310	110,480	116,500	116,800	119,000	122,000	140,000	150,000	152,000	157,000	79.8%	
Rt 123 - Fairfax	Rt 243 - Vienna	92,470	117,420	123,790	124,090	127,000	131,000	156,000	159,000	165,000	173,000	87.1%	
Rt 243 - Vienna	I-495 - Capital Beltway	125,270	153,180	161,550	161,950	167,000	172,000	187,000	189,000	190,000	196,000	56.5%	
I-495 - Capital Beltway	Rt 7 / Rt. 267	64,000	75,030	79,140	79,440	77,000	79,000	84,000	86,000	87,000	89,000	39.1%	
Rt 7 / Rt. 267	Rt 29 - West Falls Church	70,360	80,930	85,340	85,640	108,000	115,000	117,000	118,000	119,000	100,000	42.1%	
U.S. Route 29 (Lee Highway)													
Rt 215 - Vint Hill Rd.	Rt 15 - Buckland	23,050	27,670	28,240	28,350	30,000	31,000	35,000	36,000	37,000	38,000	56.2%	
Rt 15 - Buckland	Rt 55 - Gainesville	22,115	25,860	26,420	26,530	33,000	31,000	33,000	34,000	38,000	39,000	76.4%	
Rt 55 - Gainesville	I-66 at Gainesville	25,410	30,915	31,500	31,710	43,000	44,000	47,000	48,000	49,000	50,000	96.8%	
I-66 at Gainesville	Rt 234 - Manassas	4,800	7,700	7,890	7,940	4,500	4,800	8,300	9,100	8,900	9,200	91.7%	
Rt 234 - Manassas	I-66 at Centreville	4,800	7,700	7,890	7,940	6,000	6,500	7,100	8,000	9,100	9,200	91.7%	
I-66 at Centreville	Rt 28 at Centreville	24,040	28,580	29,510	28,920	30,000	31,000	34,000	39,000	36,000	37,000	53.9%	
Rt 28 at Centreville	Rt 645 - Stringfellow Rd.	24,110	29,460	30,380	29,790	34,000	33,000	34,000	39,000	35,000	36,000	49.3%	
Rt 645 - Stringfellow Rd.	Rt 608 - West Ox Road	24,110	29,460	30,380	29,790	35,000	33,000	34,000	39,000	35,000	38,000	49.3%	
Rt 608 - West Ox Road	WCL - Fairfax City	24,110	29,460	30,380	29,790	35,000	36,000	34,000	39,000	38,000	39,000	61.8%	
WCL - Fairfax City	ECL - Fairfax City	-	29,610	-	30,102	-	-	34,800	-	-	-	NA	
ECL - Fairfax City	WCL - Falls Church	24,575	27,460	28,290	27,780	28,000	28,000	29,000	30,000	30,000	31,000	26.1%	
WCL - Falls Church	ECL - Falls Church	-	25,150	-	23,288	-	-	-	-	-	-	NA	
ECL - Falls Church	I-66 and Rt. 237	27,630	29,560	30,485	29,675	28,000	28,000	29,000	29,000	29,000	30,000	8.6%	
U.S. Route 50 - Lee/Jackson Highway													
Middleburg	Rt 15 - Aldie	7,885	9,650	9,860	9,860	12,000	13,000	9,700	12,000	13,000	13,000	64.9%	
Rt 15 - Aldie	Rt 606 - Old Ox Road	13,590	18,525	18,925	19,095	13,000	12,000	13,000	13,000	14,000	15,000	10.4%	
Rt 606 - Old Ox Road	Rt 28 - Dulles Airport	13,590	18,525	18,925	19,095	14,000	14,000	15,000	16,000	17,000	18,000	39.8%	
Rt 28 - Dulles Airport	Rt 657 - Centreville Rd.	30,560	39,150	40,380	39,620	44,000	42,000	43,000	48,000	49,000	52,000	70.2%	
Rt 657 - Centreville Rd.	Rt 645 - Stringfellow Rd.	30,560	39,150	40,380	39,620	44,000	42,000	43,000	48,000	49,000	52,000	70.2%	
Rt 645 - Stringfellow Rd.	Rt 750 - Rugby Road	30,560	39,150	40,380	39,620	49,000	48,000	52,000	57,000	58,000	62,000	102.9%	
Rt 750 - Rugby Road	Rt 608 - West Ox Road	40,980	49,290	50,820	49,760	49,000	48,000	52,000	57,000	58,000	62,000	51.3%	
Rt 608 - West Ox Road	I-66 at Fair Oaks	40,980	49,290	50,820	49,760	53,000	54,000	55,000	60,000	62,000	70,000	70.8%	
I-66 at Fair Oaks	WCL - Fairfax City	50,140	57,000	58,860	57,740	58,000	58,000	48,000	53,000	54,000	56,000	11.7%	
WCL - Fairfax City	ECL - Fairfax City	-	34,110	-	48,440	-	-	33,636	-	-	-	NA	
ECL - Fairfax City	I-495 - Capital Beltway	34,755	42,085	43,415	42,505	44,000	45,000	47,000	51,000	53,000	58,000	66.9%	
I-495 - Capital Beltway	Rt 7 - Falls Church	45,050	49,515	51,145	50,135	52,000	65,000	58,000	58,000	62,000	52,000	15.4%	

Source: Average Daily Traffic Volumes on Interstate, Arterial and Primary Routes
Virginia Department of Transportation; 1985-1996

Table 8-B
HISTORICAL TRAFFIC VOLUMES ON NORTH-SOUTH FACILITIES IN THE I-66 CORRIDOR

Highway Facility and Segments		Average Daily Traffic Volumes										Pct. Change
		1985	1988	1989	1990	1991	1992	1993	1994	1995	1996	1985 - 1986
U.S. Route 15 - James Madison Highway												
SCL - Leesburg	Rt. 50 near Aldie	7,590	10,385	10,555	10,565	9,500	9,600	9,700	9,800	9,900	10,000	31.8%
Rt. 50 near Aldie	Rt. 234 - Woolsey	6,235	7,995	8,120	8,180	8,600	8,600	8,500	10,000	10,000	11,000	76.4%
Rt. 234 - Woolsey	I-66 at Haymarket	5,285	6,235	6,365	6,375	7,200	6,700	8,300	9,200	9,300	9,300	76.0%
I-66 at Haymarket	Rt. 55 at Haymarket	5,195	6,130	6,255	6,265	6,000	6,900	7,100	7,500	9,100	8,600	65.5%
Rt. 55 at Haymarket	Rt. 29 at Buckland	2,860	3,760	3,820	3,820	7,000	6,900	7,800	7,700	9,100	9,000	214.7%
Route 234 - Sudley Road												
Rt. 15 - Woolsey	Rt. 29 - Stone House	4,425	6,190	6,310	6,360	4,300	9,200	8,900	8,000	10,000	10,000	126.0%
Rt. 29 - Stone House	I-66 - Manassas	7,245	8,820	9,000	9,000	9,100	9,300	10,000	11,000	12,000	13,000	79.4%
I-66 - Manassas	NCL - Manassas	33,600	38,380	39,160	39,470	40,000	41,000	42,000	44,000	46,000	49,000	45.8%
NCL - Manassas	SCL - Manassas	-	34,730	-	36,171	-	-	-	-	-	-	NA
SCL - Manassas	Rt. 619 - Independent Hill	10,215	9,280	13,090	13,240	14,000	19,000	16,000	17,000	17,000	20,000	95.8%
Route 28 - Centreville Road												
Dulles Airport Road	Rt. 50 - Chantilly	16,245	21,540	22,040	22,200	30,000	32,000	34,000	36,000	39,000	40,000	146.2%
Rt. 50 - Chantilly	I-66 - Centreville	11,340	16,865	17,415	17,135	24,000	25,000	26,000	28,000	44,000	46,000	305.6%
I-66 - Centreville	Rt. 29 - Centreville	25,545	30,895	31,890	31,280	50,000	50,000	60,000	62,000	63,000	65,000	154.5%
Rt. 29 - Centreville	NCL - Manassas Park	22,655	26,390	26,880	26,990	41,000	40,000	43,000	45,000	46,000	48,000	111.9%
NCL - Manassas Park	ECL - Manassas Park	-	-	-	-	-	-	-	-	-	-	NA
ECL - Manassas Park	WCL - Manassas	22,560	28,270	28,790	28,890	30,000	30,000	34,000	37,000	37,000	37,000	64.0%
WCL - Manassas	Rt. 215 - Bristow	-	21,030	-	35,756	-	-	-	-	-	-	NA
WCL - Manassas		10,655	13,480	13,700	13,800	19,000	20,000	19,000	20,000	20,000	21,000	97.1%
Route 7100 - Fairfax County Parkway												
Dulles Airport Road	Rt. 50 - Greenbrier					19,155		16,024				ERR
Rt. 50 - Greenbrier	I-66 - Fair Lakes											ERR
I-66 - Fair Lakes	Rt. 29											ERR
Rt. 29	Rt. 620 - Braddock Rd.											ERR
Rt. 620 - Braddock Rd.	Rt. 123 - Ox Road											ERR
Route 123 - Chain Bridge Road												
SCL Vienna	NCL - Fairfax	36,145	41,760	43,110	42,290	41,000	45,000	46,000	49,000	52,000	53,000	46.6%
NCL - Fairfax	SCL - Fairfax	-	47,340	-	52,667	-	-	-	-	-	-	NA
SCL - Fairfax	Rt. 643 - Fairfax Station Rd.	27,155	34,570	35,665	34,905	40,000	36,000	38,000	39,000	39,000	40,000	47.3%
Rt. 643 - Fairfax Station Rd.	Rt. 641 - Butts Cross Roads	12,385	16,015	16,520	16,250	37,000	30,000	31,000	32,000	33,000	36,000	190.7%
Route 243 - Nutley Street												
Rt. 123 - Chain Bridge Rd.	I-66	24,210	26,695	27,515	27,005	30,000	25,000	35,000	37,000	38,000	39,000	61.1%
I-66	Rt. 29 - Lee Highway	16,900	20,150	20,815	20,405	30,000	25,000	35,000	37,000	38,000	39,000	130.8%
I-495 - Capital Beltway												
Rt. 7 - Leesburg Pike	I-66	128,000	159,870	168,590	160,190	181,000	187,000	192,000	194,000	200,000	206,000	60.9%
I-66	Rt. 50 - Arlington Boulevard	158,400	194,970	205,640	195,240	181,000	187,000	192,000	194,000	200,000	206,000	30.1%
Rt. 50 - Arlington Boulevard	Rt. 650 - Gallows Road	146,230	185,090	185,160	185,760	181,000	187,000	192,000	192,000	198,000	203,000	38.8%
Rt. 650 - Gallows Road	Rt. 236 - Little River Turnpike	143,340	180,150	189,920	180,520	181,000	187,000	192,000	192,000	198,000	203,000	41.6%
Rt. 236 - Little River Turnpike	Rt. 620 - Braddock Road	136,910	136,910	178,640	169,240	162,000	169,000	177,000	180,000	187,000	192,000	40.2%

Source: Avera,
Virginia
Traffic Volumes on Interstate, Arterial and Primary Routes
Department of Transportation, 1985-1996

Table 1
HISTORICAL TRAFFIC VOLUMES ON SECONDARY HIGHWAY FACILITIES IN THE I-66 CORRIDOR
(Fairfax County - Group 1)

Highway Facility and Segments		Average Daily Traffic Volumes										Pct. Change
From	To	1985	1988	1989	1990	1991	1992	1993	1994	1995	1996	1991 - 1995
Route 608 - West Ox Road												
U.S. Route 29	Fair Lakes Pkwy. (7700)	-	-	-	-	18,417	-	26,788	-	27,881	-	51.4%
Fair Lakes Pkwy.	U.S. Route 50	-	-	-	-	15,144	-	15,451	-	19,611	-	29.5%
U.S. Route 50	Rt. 684 - Waples Mill Rd.	-	-	-	-	24,258	-	25,177	-	24,305	-	0.2%
Rt. 684	Rt. 750 - Rugby Road	-	-	-	-	18,887	-	19,991	-	19,845	-	4.0%
Rt. 750	Rt. 602 - Reston Pkwy.	-	-	-	-	18,887	-	6,411	-	8,509	-	-54.9%
Route 609 - Pleasant Valley Rd.												
U.S. Route 29	Rt. 620 - Braddock Road	-	-	-	-	8,500	-	6,111	-	6,588	-	-22.5%
Rt. 620-Braddock Road	Loudoun County Line	-	-	-	-	2,825	-	2,014	-	3,051	-	8.0%
Route 612 - Yates Ford Road / Henderson Road												
Prince William County Line	Rt. 843 - Henderson Road	-	-	-	-	12,637	-	9,182	-	9,978	-	-21.0%
Rt. 643	Rt. 845 - Clifton Road	-	-	-	-	2,037	-	10,418	-	12,917	-	534.1%
Route 620 - Braddock Road												
Loudoun County Line	Rt. 4955 - Kimanna Drive	-	-	-	-	4,810	-	941	-	1,239	-	-74.2%
Rt. 4955	Rt. 662 - Stone Road	-	-	-	-	9,020	-	7,726	-	9,417	-	4.4%
Rt. 662	Rt. 28 (North of I-66)	-	-	-	-	14,020	-	7,994	-	9,922	-	-29.2%
Rt. 28 (South of I-66)	U.S. Route 29	-	-	-	-	1,757	-	6,219	-	7,221	-	311.0%
U.S. Route 29	Rt. 659 - Union Mill Road	-	-	-	-	10,234	-	17,940	-	18,384	-	79.6%
Rt. 659	Rt. 845 - Clifton Road	-	-	-	-	13,221	-	10,940	-	19,112	-	44.6%
Rt. 845	Rt. 612 - Colchester Road	-	-	-	-	13,340	-	10,343	-	19,868	-	48.9%
Rt. 612	Rt. 655 - Shirley Gate Road	-	-	-	-	14,288	-	10,745	-	19,761	-	38.3%
Rt. 655	Rt. 2538 - Prestwick Drive	-	-	-	-	21,351	-	26,427	-	23,421	-	9.7%
Rt. 2539	Rt. 123 - Ox Road	-	-	-	-	27,674	-	26,427	-	27,785	-	0.4%
Rt. 123	Rt. 653 - Sideburn Road	-	-	-	-	30,269	-	22,311	-	25,374	-	-16.2%
Rt. 653	Rt. 652 (W) - Burke Station Road	-	-	-	-	26,961	-	23,873	-	28,620	-	-1.3%
Rt. 652 (W)	Rt. 652 (E) - Guinea Road	-	-	-	-	25,844	-	26,136	-	28,889	-	11.8%
Route 645 - Lee's Corner Rd. / Stringfellow Road / Clifton Road												
Rt. 657 - Centreville Road	Rt. 669 - Thompson Road	-	-	-	-	7,282	-	13,728	-	15,339	-	NA
Rt. 669	U.S. Route 50 (W)	-	-	-	-	11,285	-	10,864	-	17,841	-	35.9%
U.S. Route 50 (W)	Rt. 4978 - Melville Lane	-	-	-	-	12,064	-	10,844	-	17,458	-	47.5%
Rt. 4978	Rt. 2551 - Bobann Drive	-	-	-	-	12,008	-	12,688	-	20,628	-	45.4%
Rt. 2551	U.S. Route 29 (W)	-	-	-	-	16,235	-	8,867	-	17,590	-	27.1%
U.S. Route 29 (E)	Rt. 620 - Braddock Road	-	-	-	-	13,034	-	11,993	-	15,970	-	35.0%
Rt. 620	Rt. 654 - Popes Head Road	-	-	-	-	9,888	-	9,249	-	14,381	-	61.5%
Rt. 654	Rt. 658 - Compton Road	-	-	-	-	9,605	-	14,871	-	12,643	-	48.7%
Rt. 658	NCL Town of Clifton	-	-	9,857	-	7,518	-	8,893	-	12,918	-	NA
NCL Town of Clifton	SCL Town of Clifton	-	-	-	-	9,022	-	8,381	-	12,753	-	71.8%
SCL Town of Clifton	Rt. 610 - Wolf Run Shoals Road	-	-	-	-	9,835	-	8,240	-	15,812	-	41.4%
Rt. 610	Rt. 123 - Ox Road	-	-	-	-	-	-	-	-	-	-	59.2%
Route 650 - Gallows Road												
Rt. 695 - Idylwood Rd.	I-66	-	-	-	-	21,693	-	21,551	-	28,237	-	NA
I-66	Rt. 29 - Lee Highway	-	-	-	-	25,379	-	22,151	-	28,672	-	NA
Rt. 29 - Lee Highway	Rt. 50 - Arlington Boulevard	-	-	-	-	47,834	-	45,885	-	44,408	-	NA
Rt. 50 - Arlington Boulevard	I-495 - Capital Beltway	-	-	-	-	34,008	-	32,845	-	32,200	-	NA

Table 8-C
HISTORICAL TRAFFIC VOLUMES ON SECONDARY HIGHWAY FACILITIES IN THE I-86 CORRIDOR
(Prince William County - Group 2)

Highway Facility and Segments		Average Daily Traffic Volumes											Pct. Change
From	To	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1986 - 1994
Route 619 - Linton Hall Road / Bristow Road													
U.S. Route 29	Rt. 675 - Glenkirk Road	3,437	-	-	-	-	-	4,396	-	6,826	-	-	98.6%
Rt. 675	Rt. 621 - Devlin Road	2,115	-	-	-	-	-	2,994	-	5,757	-	-	172.2%
Rt. 621	Rt. 28 - Nokesville Road	2,245	-	-	3,581	-	-	4,512	-	4,642	-	-	106.8%
Rt. 28	Rt. 779 - Milford Road	2,335	-	-	-	-	-	4,655	-	5,134	-	-	119.9%
Rt. 779	Rt. 611 - Valley View Drive	3,818	-	-	-	-	-	4,218	-	6,037	-	-	58.1%
Rt. 611	Rt. 651 - Hoes Road	3,204	-	-	-	-	-	4,149	-	4,838	-	-	51.0%
Rt. 651	Rt. 649 - Old Church Road	3,308	-	-	-	-	-	4,092	-	5,348	-	-	61.7%
Rt. 649	Rt. 648 - Keyser Road	3,001	-	-	-	-	-	4,044	-	5,354	-	-	78.4%
Rt. 648	Rt. 234 (W) - Dumfries Road	2,630	-	-	-	-	-	3,928	-	3,313	-	-	26.0%
Route 621 - Balls Ford Road / Devlin Road													
Rt. 619 - Linton Hall Road	Rt. 674 - Wellington Road	392	-	-	365	-	-	392	-	259	-	-	-33.9%
Rt. 674	Rt. 622 - Groveton Road	3,210	-	-	-	-	-	5,342	-	7,451	-	-	132.1%
Rt. 622	Rt. 660 - Bethlehem Road	3,738	-	-	-	-	-	5,346	-	8,125	-	-	117.3%
Rt. 660	Rt. 234 - Sudley Road	7,956	-	-	12,322	-	-	5,346	-	14,305	-	-	79.8%
Route 234	Dead End	3,173	4,123	-	-	-	-	-	-	5,219	-	-	64.5%
Route 674 - Wellington Road													
U.S. Route 29	Rt. 698 - Piney Branch Lane	7,127	-	-	-	-	-	8,523	-	8,604	-	-	20.7%
Rt. 698	Rt. 660 - Bethlehem Road	6,729	7,959	-	8,290	-	-	9,025	-	12,126	-	-	80.2%
Rt. 660	Rt. 668 - Ridew Lane	7,334	10,618	-	9,285	-	-	9,228	-	12,765	-	-	74.1%
Rt. 668	WCL - City of Manassas	13,771	-	-	-	-	-	17,907	-	15,252	-	-	10.8%

Sources: Virginia Department of Transportation
Prince William County Secondary Counts - 1986, 1987, 1990, 1992, 1994

- Traffic volumes on the north-south routes in the study area generally exhibited even more dramatic increases than did the east-west oriented routes. For example, traffic volumes along sections of Route 28 increased anywhere from 64% to 306% over the period 1985 - 1996, with a maximum value of 65,000 vehicles per day observed in the segment between I-66 and Route 29 at Centreville in the year 1996.

While present day traffic volumes along the highway facilities in the I-66 study area tend to increase along the radial travel corridor from west to east approaching the Capital Beltway, the dramatic increases observed in north-south traffic volumes indicate the presence of major circumferential / cross-corridor movements as well.

As part of the I-66 Corridor MIS travel analysis, a Northern Virginia Regional Travel Demand Model was developed to forecast regional travel demands. The Northern Virginia Regional Travel Demand Model is an enhanced version of the earlier Dulles Rail Corridor Travel Demand Model, and incorporates an expanded regional cordon line, a refined travel analysis zone structure (particularly in the western portions of the study area), and utilizes the most recent MWCOG Version 5.3 land use forecasts. The model was calibrated and validated to 1990 travel conditions in the Northern Virginia area and was then used to forecast Year 2020 travel demands under the assumption that the proposed highway and transit improvements included in the 1996 Constrained Long Range Transportation Plan (CLRP) for the region would be implemented by the year 2020.

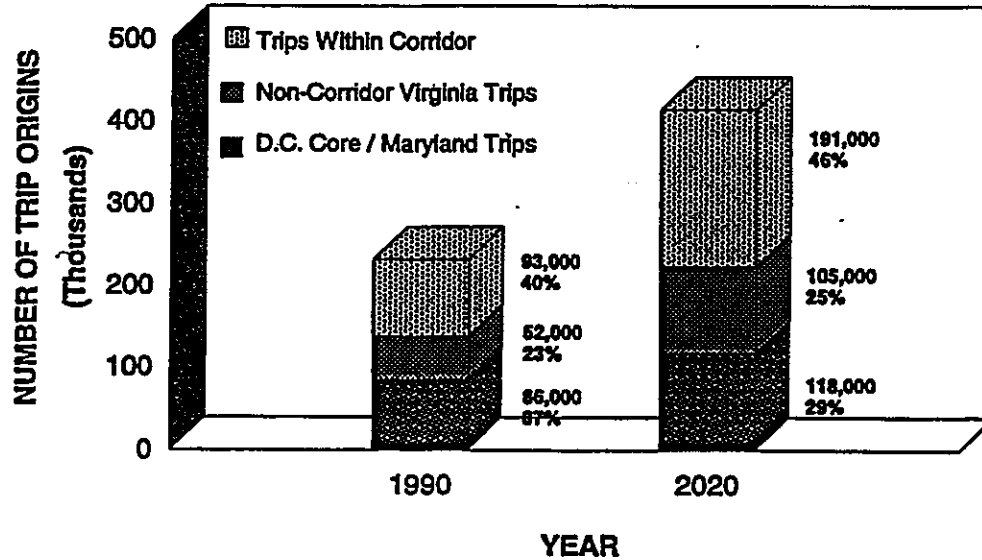
Reflective of the projected changes in population and employment discussed previously, the application of the Northern Virginia Regional Model forecasts dramatic increases in travel within the study area. As shown on Figure 13, there were estimated to be approximately 231,000 home-based work trips generated by corridor residents in the year 1990. This is projected to increase to a total of approximately 414,000 home-based work trips in the year 2020, or an increase of approximately 79%. Similarly, for those home-based work trips attracted to destinations (i.e., jobs) in the study corridor, there were projected to be approximately 206,000 trips in 1990 and approximately 378,000 trips in 2020, or about an 83% increase.

It is also interesting to note that a large percentage of the home-based work trips either generated or attracted to the study area have both their origin and their destination in the study area. For example, in 1990, approximately 93,000 trips, or about 40% of the total home-based work trips generated in the study corridor, had their destination in the study area as well. By 2020, it is projected that approximately 191,000 trips, or about 46% of the total work trips generated, will have their destination in the study area. This represents a 105% increase in the number of intra-corridor work trips.

I-66 CORRIDOR MIS

HOME BASED WORK TRAVEL PATTERNS

Trips Originating in the Corridor



HOME BASED WORK TRAVEL PATTERNS

Trips With Destinations in the Corridor

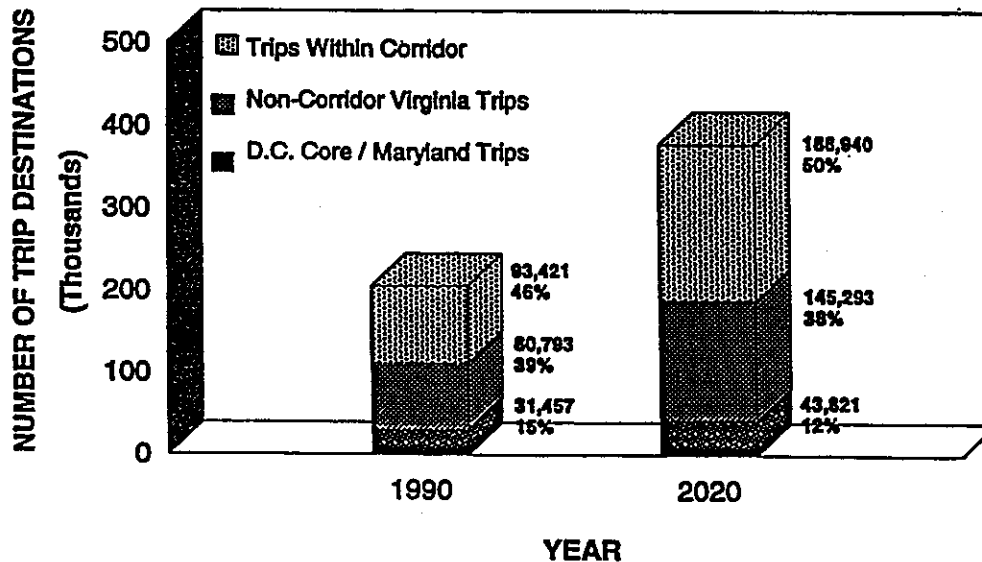


Figure 13

At the same time, the number of corridor generated home-based work trips destined for the D.C. core and Maryland suburbs are projected to increase from about 86,000 trips in 1990 to about 118,000 trips in 2020, with the majority of this increase going to the Maryland suburbs. Trips generated in the corridor destined for other locations in Northern Virginia (such as Tysons Corner, the Reston-Herndon area, the Springfield-Burke area, etc.) are projected to increase from about 52,000 trips in 1990 to about 105,000 trips in 2020.

Moreover, for those home-based work trips which have both their origin and their destination in the I-66 study corridor, a very large percentage of the total trips are anticipated to be relatively short-distance, local trips. For example, in 2020, it is anticipated that approximately 28% of the trips generated from the East Corridor subarea will have destinations in either the East or Central subareas, while approximately 42% of the trips generated from the Central corridor will have destinations in either the East, Central, or Western subareas. Similarly, the West subarea will have nearly 47% of its total generated trips destined for the Central and West subareas, while the Outer subarea would have approximately 54% of its generated trips destined for either the West or Outer subareas.

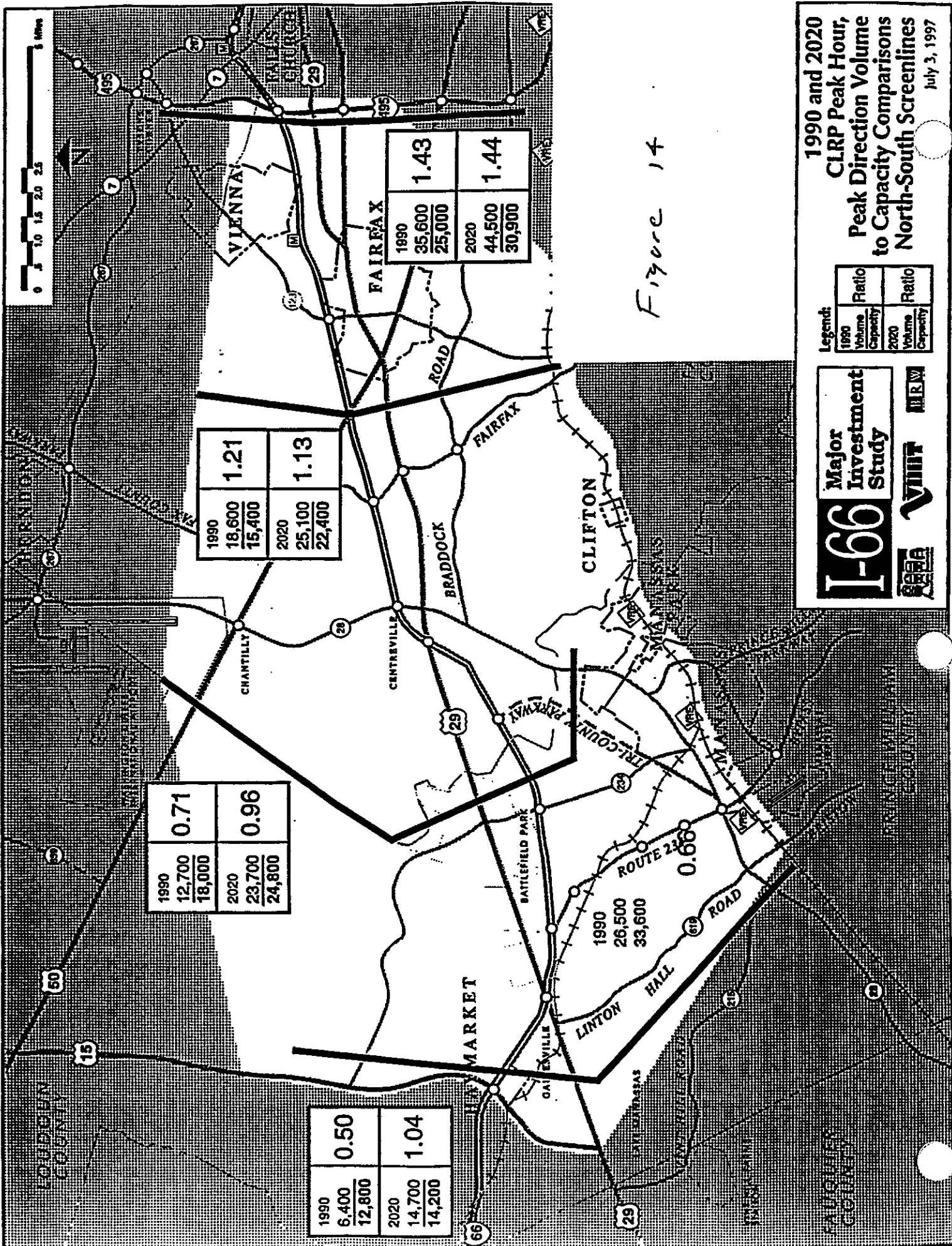
Overall, the further west in the corridor one goes, the fewer are the total number and percentage of trips made that are destined for the downtown Washington core, the "Inner Virginia" jurisdictions, or the Tysons Corner area. For example, while some 20,255 trips (about 19% of the total) generated from the East subarea are destined for the Downtown Core in 2020, only about 2,600 trips (five percent of the total trips) generated from the Outer subarea are destined for Downtown Washington.

Clearly, increases in travel demand of these magnitudes would place additional strain on what is already, in many parts of the study area, an overloaded and heavily congested transportation system. To illustrate this, the projected travel demand patterns for 1990 and 2020 were assigned to the 1990 and 2020 highway networks and an assessment of the peak-hour / peak direction volume to capacity (V/C) ratio was made. The results of this analysis are presented on Figure 14 for east-west travel along the I-66 corridor and on Figure 15 for north-south oriented travel across the corridor.

The major findings from this analysis are as follows:

East-West Oriented Travel Along the I-66 Corridor:

- In 1990, the PM peak-hour, peak-direction traffic demand exceeded the available capacity on the east-west routes just west of the Capital Beltway (V/C ratio = 1.43), and just west of the junction of I-66 and Route 50 west of Fairfax City (V/C ratio = 1.21).



1990	12,700	0.71
	18,000	
2020	23,700	0.96
	24,800	

1990	6,400	0.50
	12,800	
2020	14,700	1.04
	14,200	

1990	18,600	1.21
	15,400	
2020	25,100	1.13
	22,400	

1990	35,600	1.43
	25,000	
2020	44,500	1.44
	30,900	

Figure 14

Legend:

1990	Ratio
Volume	
Capacity	
2020	Ratio
Volume	
Capacity	

I-66 Major Investment Study

VMT **TRW**

1990 and 2020
CLRP Peak Hour,
Peak Direction Volume
to Capacity Comparisons
North-South Screenlines

July 3, 1997

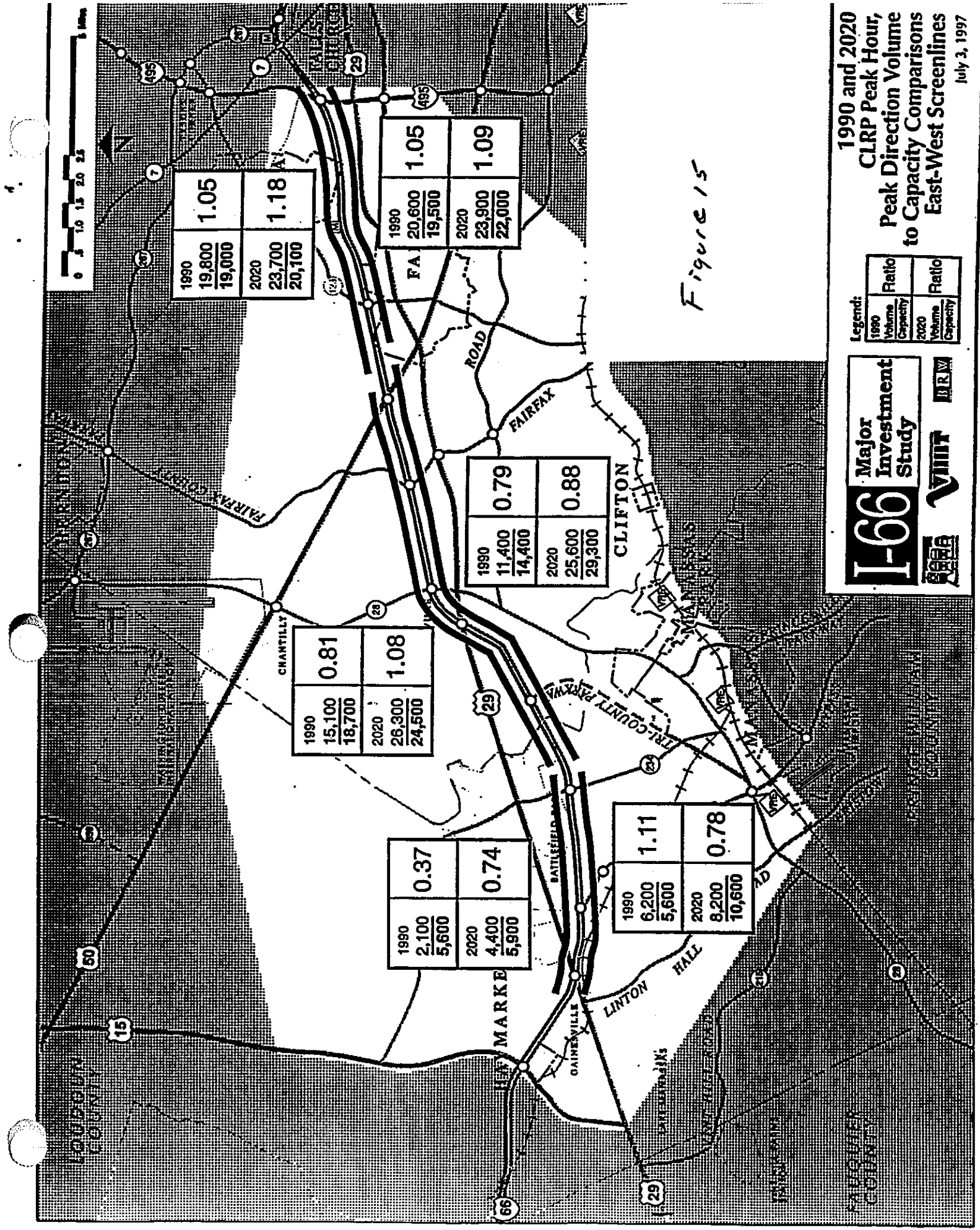


Figure 15

1990 and 2020
CLRP Peak Hour,
Peak Direction Volume
to Capacity Comparisons
East-West Screenlines

July 3, 1997

Legend:

1990	Ratio
Volume	Capacity
2020	Ratio
Volume	Capacity

I-66 Major Investment Study

- By 2020, traffic volumes on the routes examined will increase substantially, but those roadway improvements included in the CLRP will provide some additional roadway capacity.
- By 2020, the PM peak-hour, peak-direction traffic volumes are projected to exceed the available capacity on the east-west routes just west of the Capital Beltway (V/C ratio = 1.44), just west of the Route 50 / I-66 junction (V/C ratio = 1.13), and east of Route 15 (V/C ratio = 1.04). East of Route 234, the projected traffic volume will approximately equal the anticipated capacity (V/C = 0.96).

North-South Oriented Travel Across the I-66 Corridor:

- In 1990, the PM peak-hour, peak direction travel demand exceeded the available capacity of the north-south routes located on both the north side (V/C ratio = 1.05) and the south side (V/C ratio = 1.05) of I-66 from the Capital Beltway west to Route 50, and on the south side of I-66 between Route 29 at Gainesville and Route 234 at Manassas (V/C ratio = 1.11).
- By 2020, traffic volumes will increase substantially but those roadway improvements included in the CLRP will provide some additional roadway capacity.
- By 2020, the PM peak-hour, peak-direction traffic volumes are projected to exceed the available capacity on the north-south routes located on both the north side (V/C ratio = 1.18) and the south side (V/C ratio = 1.09) of I-66 from the Capital Beltway west to Route 50, and on the north side of I-66 between Route 50 and Route 234 (V/C ratio = 1.08).

These projected congestion levels, even with the full implementation of all of the highway and transit system improvements within the corridor which are included in the regional CLRP, clearly indicate the need for the provision of additional transportation system capacity. Moreover, with increased congestion levels will come a higher number of accidents and congestion related incidents, which in turn, will result in higher levels of vehicle exhaust emissions than would be observed with lower congestion levels.

Furthermore, as congestion levels increase on the freeway and arterial systems, motorists are likely to seek other travel routes. This may result in an increased use of the local roadway system (i.e., residential collector streets), which would, in turn, have the potential to make travel conditions on the local roadway network more congested and unsafe.

CONSISTENCY WITH COMMUNITY COMPREHENSIVE PLANS

All of the local jurisdictions within the defined I-66 study area have developed and adopted comprehensive plans which seek to achieve a balance between the travel demands generated by land development and the capacity of the multi-modal transportation system to accommodate those demands at an acceptable level of transportation service. In general, the comprehensive plans for the communities in the I-66 corridor identify the desirability of an increased reliance on the use of multi-occupant vehicles, as opposed to single-occupant vehicles. Representative excerpts from these comprehensive plans are presented below:

Fairfax County Policy Plan:(Ref. 9)

Transportation Goal: "Land use must be balanced with the supporting transportation infrastructure, including the regional network, and credibility must be established within the public and private sectors that the transportation program will be implemented. Fairfax County will encourage the development of accessible transportation systems designed through advanced planning and technology, to move people and goods efficiently while minimizing environmental impact and community disruption. Regional and local efforts to achieve a balanced transportation system through the development of rapid rail, commuter rail, expanded bus service and the reduction of excessive reliance upon the automobile should be the keystone policy for future planning and facilities. Sidewalks and trails should be developed as alternative transportation facilities leading to mass transit, high density areas, public facilities and employment areas."

Objective 1: "Fairfax County should provide for both through and local movement of people and goods through a multi-modal transportation system that places the maximum practical emphasis on alternatives to the single-occupant automobile for peak-hour commuting."

Objective 2: "Fairfax County should seek to increase the number of commuters using non-motorized transportation and public transportation (i.e., rail, bus, carpooling and vanpooling) so that, by the year 2000, 60% of County commuters to the metropolitan core, 20% of the commuters to the Tyson's Corner Urban Center, 15% of the commuters to Suburban Center and Transit Station Areas and 5% of other County commuting work trips will use public transportation, and 3% of all trips will be made by non-motorized (pedestrian and bicycle) transportation."

Prince William County Comprehensive Plan - Transportation Plan Chapter (Ref. 10)

- GOAL: "To achieve and sustain a complete, safe, and efficient multimodal circulation system and plan so that existing and future components of the transportation network will provide the capacity necessary to meet the demands placed upon the system."
- Policy 1: "Improve service levels of all transportation modes throughout the County."
- Policy 2: "Promote new methods of increasing the capacity of the existing transportation system in addition to expanding facilities."

Transit Action Strategies -

- "Pursue the extension of Metrorail within the I-66 and I-95 corridors."
"Promote an efficiently designed feeder (bus) network to commuter rail stations and other transit centers."

Loudoun County Comprehensive Plan - Countywide Transportation Plan Element (Ref. 11)

Policies:

- "Loudoun County and adjoining jurisdictions need to plan together for significant improvements to regional roads to ensure they continue to serve their regional transportation function."
- "Loudoun County supports, where feasible: the development of efficient, convenient local and commuter transit service consisting of rail and bus services, carpools, van pools and other modes..."
- "The Countywide Transportation Plan identifies transit corridors for existing and proposed bus and rail transit networks. Development within these corridors should be planned using the ultimate transit system to determine the density, use mix and design. A transit corridor can be defined as the transit route, plus the land area for up to one mile on either side of the route."

The current planning documents produced by Fairfax and Prince William Counties, for example, also identify the desirability of specific transportation system improvements in the project area. Among these more explicit citations are the following:

Fairfax County Comprehensive Plan - Transportation Element (1996-97), (Ref. 12)

1. Identifies the I-66 corridor between the Fairfax/Arlington County Line and the Fairfax/Prince William County Line as an "*Enhanced Public Transportation Corridor*", which is defined as follows: "*Major public transportation facility (such as rapid rail transit, high occupancy vehicle lanes) will be provided in this corridor based upon the results of a comprehensive alternatives analysis.*"
2. Identifies I-66 as a 10-lane cross-section facility (including high occupancy vehicle lanes) between the Capital Beltway and the proposed I-66/Route 28 Bypass interchange in the Centreville area.
3. Identifies potential locations for Rail Stations / Commuter Parking Lots along the I-66 corridor at: I-66/Route 50; I-66/Stringfellow Road; and I-66/Route 29 at Centreville.
4. Identifies Route 28 as an "Enhanced Public Transportation Corridor" between the Fairfax/Prince William County Line on the south and the Fairfax/Loudoun County Line on the north.
5. Identifies the implementation of HOV lanes along the Fairfax County Parkway from I-66 north to the Dulles Toll Road (State Route 267).
6. Identifies the general corridor alignment for the proposed Route 28 Bypass from I-66 in the Centreville area south to the Fairfax/Prince William County Line and the associated Tri-County Connector from I-66 north to the Fairfax/Loudoun County Line.

Prince William County Comprehensive Plan - Transportation Chapter: (Ref.9)

- "I-66 (right-of-way requirement = 275' minimum/variable) - Installation of permanent HOV facilities is proposed between Fairfax County and Gainesville. However, interim HOV lanes between Fairfax County and Route 234 are proposed in the near term. Current traffic indicates that two additional conventional lanes will be needed to meet future traffic demands....Additionally, the possibility of extending Metro's Orange Line to Gainesville within the median of I-66 should be

studied.”

- “Route 28 Bypass (right-of-way requirement 200') - This new facility is an extension of Godwin Drive from Sudley Road to Fairfax County. It is planned as a limited access type roadway with interchanges at Route 234 and Lomond Drive. It will provide substantial relief to Route 28 and I-66 and is projected to carry more than 66,000 vpd (vehicles per day).”

Loudoun County Comprehensive Plan: (Ref. 10)

“Route 50 is planned to be widened to a six-lane median-divided road in eastern Loudoun County, transitioning to a four-lane median-divided road at an appropriate location east of Gilberts Corner. Eight interchanges are planned at the following locations: Route 609, the South Riding Road, Route 606/Tri-County Parkway, Route 659/West Spine Road, Route 659 Relocated/Route 234 Bypass Connector, Lenah Area Spine Road, and Route 860. The interchange locations may change depending upon the outcome of the Western Bypass discussion and the Route 50 Corridor Study.”

It is thus readily apparent that the ongoing development and evaluation of multi-modal transportation alternatives within the defined study area for the I-66 Major Investment Study is supportive of the currently adopted transportation goals, objectives, and policies of the effected Town, City and County jurisdictions in the Northern Virginia portion of the Washington Metropolitan Region.

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LIST OF REFERENCES

- | <u>Ref. No.</u> | <u>Title</u> |
|-----------------|--|
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| 4 | <u>Monitoring Project Final Report: I-66 Congestion Management Program</u> ; Prepared by TransCore for the Virginia Department of Transportation; August, 1977. |
| 5 | <u>1985 Highway Capacity Manual</u> (Third Edition, Updated 1994), Special Report 209; Transportation Research Board, National Research Council; Washington, D.C.; Chapter 3 - Basic Freeway Sections. |
| 6 | <u>Traffic Quality on the Metropolitan Washington Area Freeway System - Final Report</u> ; Spring, 1996; Prepared by Skycomp, Inc. for the Metropolitan Washington Council of Governments. |
| 7 | <u>Socio-Economic Characteristics: Existing Conditions and Trends Report</u> ; Fairfax Plan Monitoring, Report No. 1; Fairfax County Office of Comprehensive Planning; July, 1995. |
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| 9 | <u>Fairfax County Comprehensive Plan - Policy Plan Element</u> ; Fairfax County (VA) Office of Comprehensive Planning; August, 1990. |
| 10 | <u>Prince William County Comprehensive Plan</u> ; Prince William County (VA) Department of Planning; 1990. |
| 11 | <u>Countywide Transportation Plan</u> ; Loudoun County (VA) Department of Planning; July, 1995. |
| 12 | <u>Fairfax County Transportation Plan</u> ; (As Amended Through October 1, 1995); Fairfax County Office of Transportation; October, 1995. |



I-66
CORRIDOR

**Major
Investment
Study**



Travel Mode Sensitivity to Auto Operating Costs

November 12, 1997



TRAVEL MODE SENSITIVITY TO AUTO OPERATING COSTS

- Travel behavior at the trip choice level is primarily impacted by out-of-pocket costs
- Travel behavior is only influenced by costs that would be avoidable through a change in travel mode
- Travel mode sensitivity is a fixed relationship in the travel model derived from data from other cities

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TRAVEL COSTS

- “Out-of Pocket” auto operating costs
 - gas, oil
- “Fixed” auto operating costs
 - Purchase price, insurance
- Other travel costs
 - Parking, tolls
- Transit Fares



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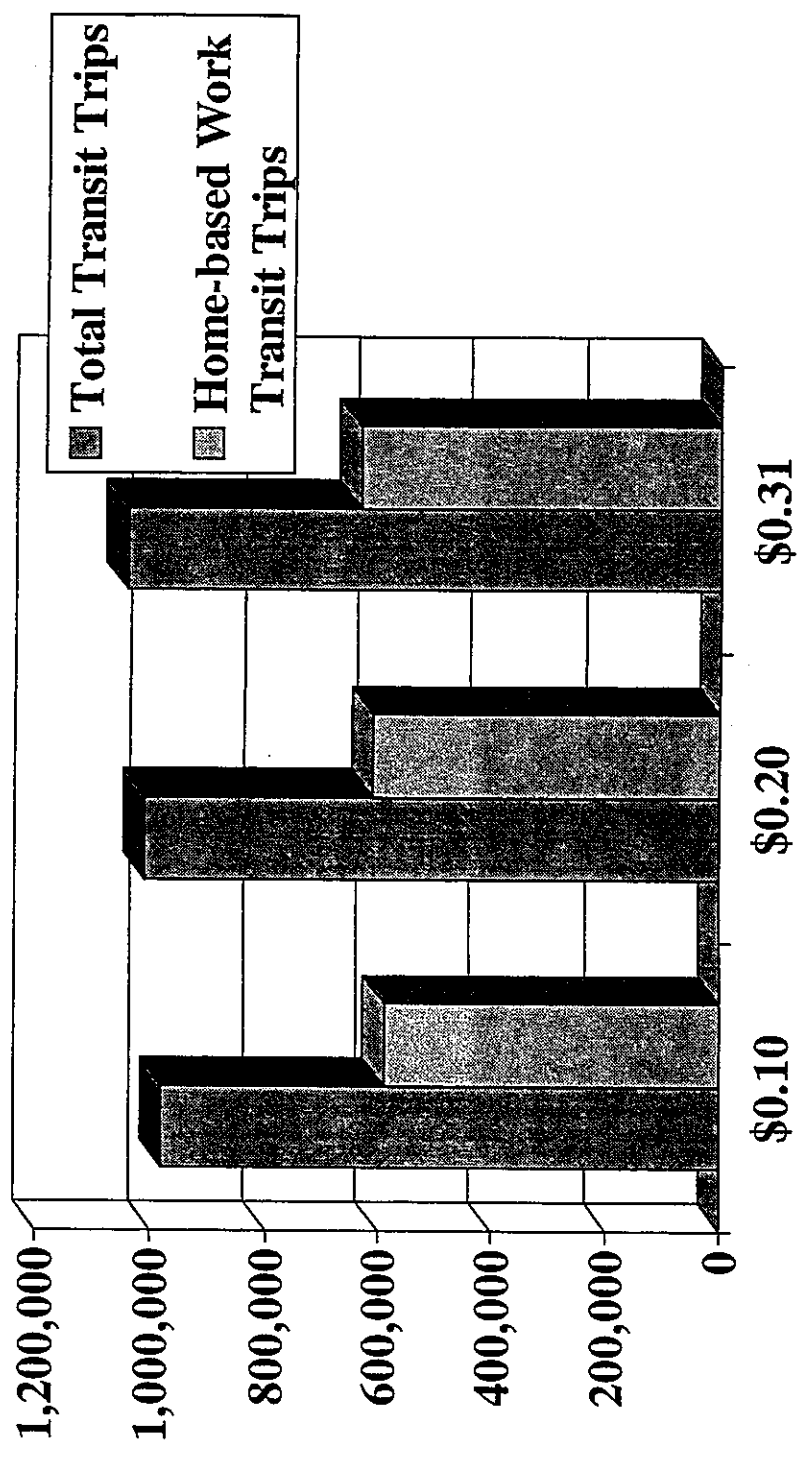
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FORECAST 2020 TRANSIT TRIPS BY AUTO OPERATING COST



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TRAVEL MODE SENSITIVITY TO AUTO OPERATING COSTS - Conclusions

- If out-of-pocket auto operating costs double relative to the cost of transit, transit ridership will increase by 3 to 4%.
- If out-of-pocket auto operating costs triple relative to the cost of transit, transit ridership will increase by 6 to 8%.



I-66 CORRIDOR MIS

SUMMARY OF GOALS AND EVALUATION MEASURES

November 1997

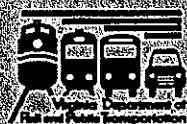


TABLE 1
SUMMARY OF GOALS AND EVALUATION MEASURES BY SCREEN

Goal #1

Accommodate Existing and Future Mobility Demand

Evaluation Criteria	Measures of Effectiveness	Screen 1A	Screen 1B	Screen 2A	Screen 2B	Screen 3
Roadway Traffic Operations	<i>Level of Service on Primary Study Area roadways</i>		■	■	■	■
	<i>Vehicle miles of travel on the Primary Study Area roadways</i>		■	■	■	■
	<i>Vehicle hours of travel on the Primary Study Area roadways</i>		■	■	■	■
	<i>Vehicle hours of delay on the Primary Study Area roadways</i>		■	■	■	■
	<i>Vehicle Occupancy</i>			■	■	■
Transit System Ridership	<i>Transit patronage forecasts by mode</i>		■	■	■	■
	<i>Primary Study Area mode splits</i>		■	■	■	■
	<i>New Transit Riders</i>			■	■	■
Mobility	<i>Person Throughput</i>			■	■	■

TABLE 1 (Continued)
SUMMARY OF GOALS AND EVALUATION MEASURES BY SCREEN

Goal #2

*Improve Regional Access to I-66
Corridor Activity Centers and Improve
Access from the I-66 Corridor to the
Region*

Evaluation Criteria	Measures of Effectiveness	Screen 1A	Screen 1B	Screen 2A	Screen 2B	Screen 3
Accessibility	<i>Door-to-door transit and vehicle travel times between representative origin-destination pairs including reverse commutes</i>		■	■	■	■
	<i>Number of households within 1/3 and 2/3 mile of transit stations/stops</i>					■
Reverse Commute Accessibility	<i>Number of reverse commute transit trip served</i>		■	■	■	■

TABLE 1 (Continued)
SUMMARY OF GOALS AND EVALUATION MEASURES BY SCREEN

Goal #3

Improve Goods Movement

Evaluation Criteria	Measures of Effectiveness	Screen 1A	Screen 1B	Screen 2A	Screen 2B	Screen 3
Truck Travel Time	<i>Number of employment centers served</i>					■
	<i>Travel time between selected O-D pairs during off-peak</i>					■

TABLE 1 (Continued)
SUMMARY OF GOALS AND EVALUATION MEASURES BY SCREEN

Goal #4

Coordinate the Transportation Services to Complement Existing and Future Land Use

Evaluate Criteria	Measures of Effectiveness	Screen 1A	Screen 1B	Screen 2A	Screen 2B	Screen 3
Land Use	<i>Consistency with adopted plans</i>	■	■		■	■
	<i>Compatibility with existing land use and zoning</i>					■

TABLE 1 (Continued)
SUMMARY OF GOALS AND EVALUATION MEASURES BY SCREEN

Goal #5

Minimize the Adverse Transportation Related Environmental Impacts and Foster Positive Environmental Impacts with Transportation Improvements

Evaluation Criteria	Measures of Effectiveness	Screen 1A	Screen 1B	Screen 2A	Screen 2B	Screen 3
Adjacency Impacts	<i>Major effects on the natural environmental and community context</i>	■				
Displacements and Relocations	<i>The number of displacements of residential units, businesses, institutions and public facilities</i>				■	■
Neighborhoods	<i>Land use change, secondary development potential, traffic changes, neighborhood character, community cohesion, and introduction of new visual elements</i>					■
Noise	<i>The number of noise sensitive receiver sites (homes, institutions and community facilities) subject to substantial increases in noise</i>				■	■
Air Quality	<i>The predicted change in VMT and the resultant effect on regional air pollution emissions (NO_x, VOC, CO)</i>				■	■

Continued

TABLE 1 (Continued)
SUMMARY OF GOALS AND EVALUATION MEASURES BY SCREEN

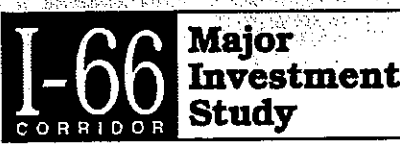
Evaluation Criteria	Measures of Effectiveness	Screen 1A	Screen 1B	Screen 2A	Screen 2B	Screen 3
Aquatic Ecosystem/Water Resources	<i>Number of stream crossings</i>				☐	☐
	<i>Number, acreage and type of wetlands impacted</i>				☐	☐
	<i>Acreage of hydric soils impacted, and floodplain acreage impacted</i>					☐
Energy	<i>Gallons of gasoline consumed</i>					☐
Historical/Archaeological Properties	<i>Number of structures impacted</i>				☐	☐
	<i>Number of sites impacted</i>				☐	☐
	<i>Acreage of property impacted</i>				☐	☐
	<i>Alteration to the historic context caused by visual intrusion, elevated noise levels, or changes in access</i>					☐
Parklands	<i>Number, acreage, facilities, and functions of Section 4(f) and 6(f) parklands impacted</i>				☐	☐
Contaminated Materials	<i>Number of superfund sites, land fills, or underground storage tank sites impacted</i>					☐
Visual/Aesthetic	<i>Number of quality visual settings altered.</i>					☐
Safety	<i>Estimated number of accidents by mode, severity, and/or economic loss</i>					☐
Environmental Justice	<i>Neighborhood effects stratified by income and race</i>					☐

TABLE 1 (Continued)
SUMMARY OF GOALS AND EVALUATION MEASURES BY SCREEN

Goal #6

Provide a Cost-Effective Investment Strategy for the I-66 Corridor

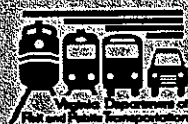
Evaluation Criteria	Measures of Effectiveness	Screen 1A	Screen 1B	Screen 2A	Screen 2B	Screen 3
Capital Cost	<i>Order of Magnitude Capital Cost</i>	■				
	<i>Comparative capital cost</i>				■	■
Operating and Maintenance Cost	<i>Comparative operating and maintenance cost</i>				■	■
Annual Cost	<i>Comparative annual cost</i>				■	■
Cost Effectiveness	<i>Total annual cost per incremental annual rider</i>				■	■
	<i>Total annual cost per incremental passenger mile</i>				■	■
	<i>Operating surplus/deficit per rider</i>				■	■
	<i>Cost (capital and operating) per incremental capacity provided</i>					■
	<i>Incremental (capital and operating) cost/incremental non-SOV user</i>					■



Screen 2 Strategy Refinement

Strategies #12, #13, and #15 Substitutions

November 1997

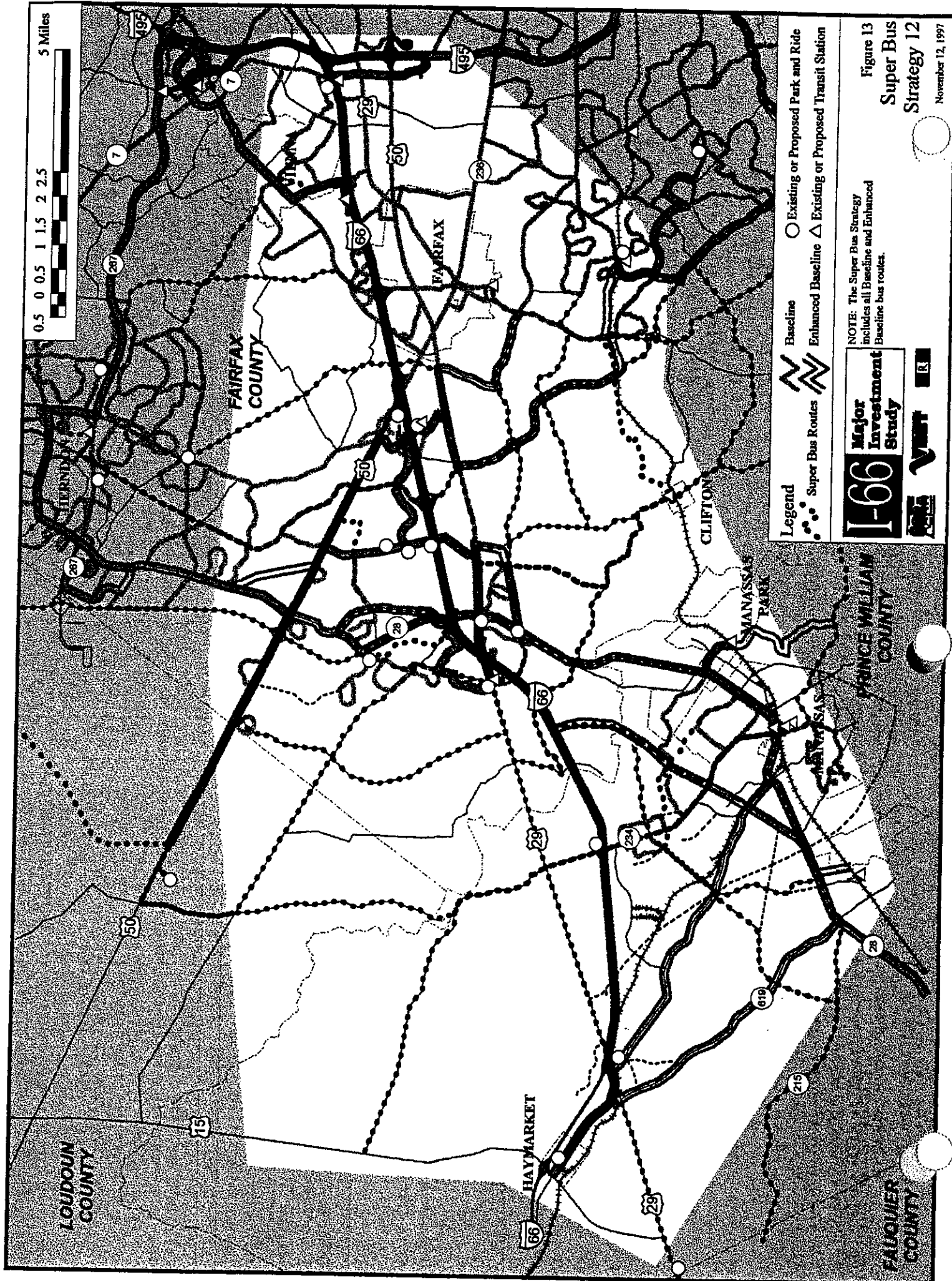


Strategy #12 "Super Bus"

The intent of the "Super Bus" strategy is to define a public transportation oriented investment strategy which falls into a realm of cost and service somewhere between the "Enhanced Baseline" and any of the more capital intensive HOV, LRT, and Metrorail alternatives which have been previously identified. Further, this option seeks to maximize the planned investments in the regional highway and transit systems contained in the current CLRP, particularly with respect to planned park-and-ride/commuter parking lots and the construction/expansion of collector and arterial class highways and streets.

The strategy was developed by evaluating major origins and destinations in the study area using MWCOG round 5.3 socio-economic projections. Fundamental principles used in the development of this strategy are as follows:

- Craft a network of high quality bus service along major travel corridors in order to best serve the major defined origin-destination patterns in the study area.
- The "Super Bus" routes represent additions to the bus systems proposed as part of the Baseline (CLRP) and Enhanced Baseline strategies.
- Minimize the amount of local bus service to be provided in low density residential areas with low transit use potential.
- Maximize the use of park-and-ride lots as collection points for transit riders.
- Attempt to serve multiple destinations with a single bus route wherever possible.
- Treat the Tysons Corner area as if it were a major downtown central business district by providing high frequency, direct transit service between Tysons Corner and the major residential concentrations in the corridor.
- Focus the "Super Bus" network on serving the travel demands within the I-66 Corridor MIS study area with cross corridor transit services limited to those bus routes included in the Baseline or CLRP transit system.



Strategy #13 County Highway Plan

This strategy includes selected roadway improvements that are part of County Comprehensive Plans but are not in the CLRP. The roadway improvements included in this strategy are shown in the following table.

ELEMENTS OF STRATEGY #13, COUNTY HIGHWAY PLAN Facility Improvements from Comprehensive Plans not in the CLRP

FACILITY	COUNTY	FROM	TO	NUMBER OF LANES		
				EXISTING	CLRP 1/ FY 97-02	COUNTY PLAN
Rt 7	Fairfax	WCL Falls Church	I-495	4	4	6
Rt 28	Fairfax	FF Co Line	Rt 29	4	6 study	6
Rt 28	Fairfax	I-66	Dulles Toll Road	6	8 study	8
Rt 28 Bypass	Fairfax	FF Co Line	I-66	0	4	6
Rt 28 Bypass	Fairfax	I-66	FF/LDN Co Line	0	4 study	4
Rt 29	Fairfax	I-495	Graham Rd	4	4	6
Rt 29	Fairfax	Pleasant Valley Dr	WCL Fairfax	4	6 study	6
Rt 123	Fairfax	I-66	Vienna CL	4	4	6
Rt 608	Fairfax	Reston Parkway	Centreville Rd	2	2	4
Stone-Braddock Connector	Fairfax	Braddock/Rt 28	Stone/Lilva	0-2	0-2	4
Stringfellow Rd	Fairfax	Rt 29	Braddock	2	2	4
Shirley Gate	Fairfax	Rt 29	Rt 50	4	4	6
Shirley Gate	Fairfax	Rt 50	I-66	4	4	4
Frying Pan Rd	Fairfax	Rt 28	Centreville Rd	2-4	2-4	6

FACILITY	COUNTY	FROM	TO	NUMBER OF LANES		
				EXISTING	CLRP 1/ FY 97-02	COUNTY PLAN
Pleasant Valley Rd	Fairfax	Rt 29	Rt 50	2-4	2-4	4
Braddock Road	Fairfax	Stone Rd	Flat Lick	2-4	2-4	4
Fox Mill Rd	Fairfax	Reston Pkwy	Monroe	2	2	4
Monroe Street	Fairfax	West Ox Road	Fox Mill Rd	2	2	4
Sunset Hills Rd	Fairfax	Wiehle Ave	FF Co Pkwy	4	4	6
Reston Parkway	Fairfax	Sunrise Valley Dr	Baron Cameron Ave	4	4 study	6
Walney Rd	Fairfax	US 50	Poplar Tree	2	2	4
Poplar Tree	Fairfax	Stringfellow Rd	Westfields Blvd	2	2 study	4
Gallows Rd	Fairfax	Old Court House Rd	I-495	4-6	4-6	6
Gallows Rd	Fairfax	I-495	Rt 236	4	4	4
Rt 28 Bypass	Loudoun	FF/LDN Co line	Rt 50	0	4 study	4
Rt 28	Prince William	NCL Manassas	FF Co Line	4	6 study	6
Rt 29	Prince William	FQ Co line	Gainesville	4	6 study	6
Rt 234	Prince William	Poplar Ford	Rt 15	2	2	4
Rt 234 Bypass	Prince William	I-66	PW/LDN Co line	0	0	4
Heathcote Blvd	Prince William	Catharpin	Rt 15	0	0	4
Haymarket Bypass	Prince William	Rt 29	Rt 15	0	0	4
Artemus Road	Prince William	PW/LDN Co line	Rt 15	0	0	4

Note:
1/ Study projects are not funded for construction.

0.5 0 0.5 1 1.5 2 2.5 5 Miles

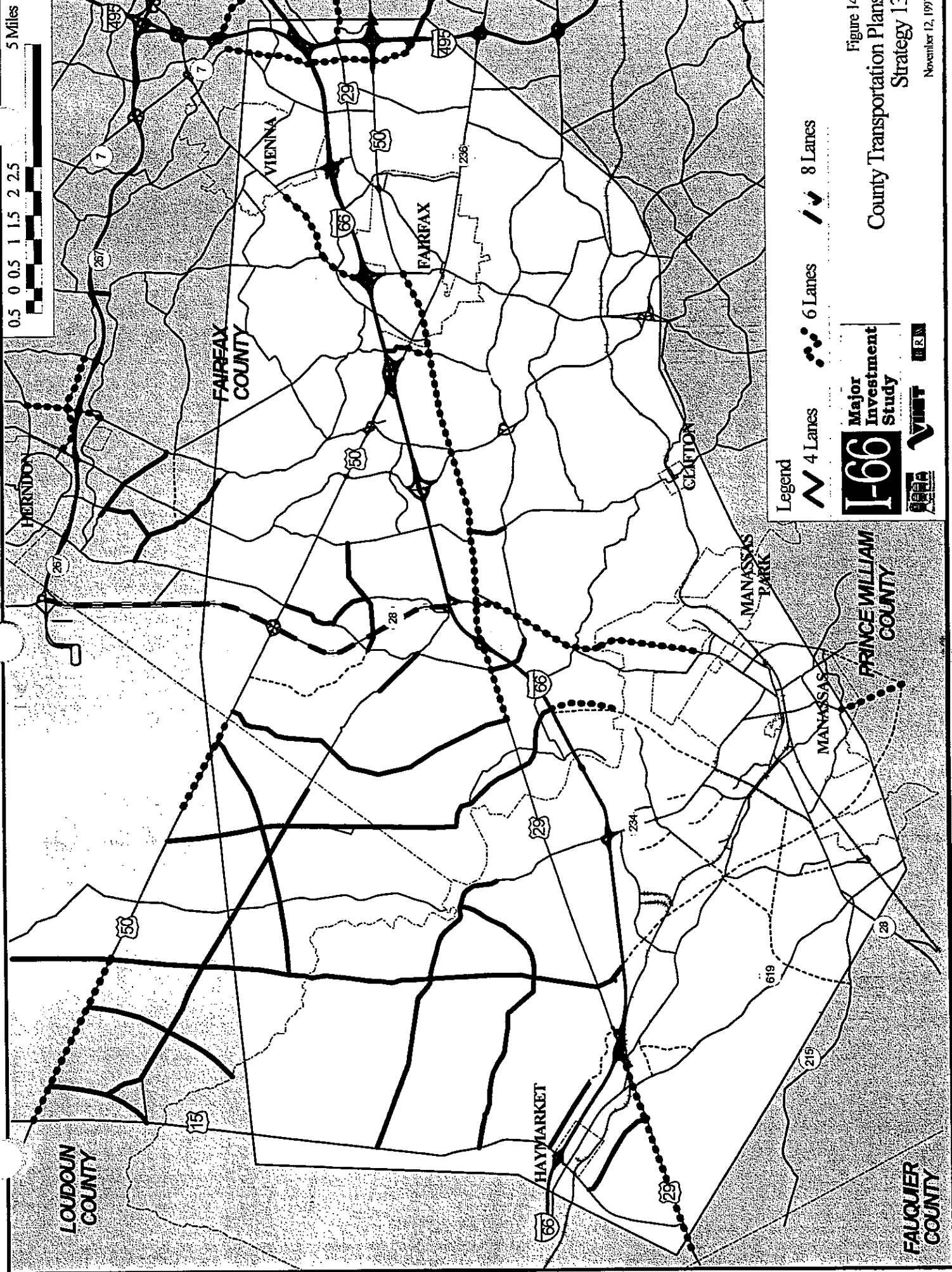


Figure 14
County Transportation Plans
Strategy 13
November 12, 1997

I-66 Major Investment Study

Legend

- 4 Lanes
- 6 Lanes
- 8 Lanes

MANASSAS PARK
MANASSAS
CLAYTON
VIENNA
FAIRFAX
HAYMARKET
LOUDOUN COUNTY
PRINCE WILLIAM COUNTY
FAUQUIER COUNTY

Strategy #15 Virginia Railway Express

This strategy would extend VRE service to Gainesville. This element could be combined with any of the strategies defined above.



I-66 CORRIDOR MIS

SCREEN 2

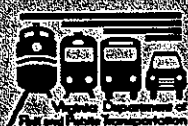
MULTI-MODAL INVESTMENT STRATEGIES

NETWORK DEFINITION

Prepared By:

BRW, Inc.

September 23, 1997
(Revised)



MULTI-MODAL INVESTMENT STRATEGY: SOV+HOV

#1

HIGHWAY NETWORK

Baseline Scenario

- + Add 1 SOV to I-66 from I-495 to Rt. 50 and eliminate existing concurrent flow HOV lanes. This will effectively make 4 continuous SOV lanes in each direction on I-66 from I-495 to Rt. 29 (Gainesville).
- + Barrier Separated reversible HOV Lanes (2) on I-66 between I-495 and Rt. 29 (Gainesville)
- + Barrier Separated reversible HOV Lanes (2) on Rt. 29 between I-66 and Rt. 15
- + Existing Concurrent HOV Lanes on I-66 are converted to SOV
(Future Cross-section is 4 SOV+2 HOV in the peak direction from I-495 to Gainesville)
- + HOV Interchange Locations (to/from the east):
 - 1. I-495 (to/from north, south and east)
 - 2. Vienna Metro Station (to/from the west)
 - 3. Rt. 123 (to/from south, to/from east)
 - 4. Rt. 50 (to/from the west)
 - 5. Monument Drive (both east and west)
 - 6. Stringfellow Road
 - 7. Stone Road (to/from east and west)
 - 8. Slip Ramp East of Rt. 28 Bypass
 - 9. Slip Ramp East of 234
 - 10. Rt. 29 (Gainesville)
- + Six Lanes on: Rt. 50 - Rt. 123 to Jermantown Road
Rt. 29 - Rt. 123 to I-66 at Centreville
- + Grade Separated Interchanges at:
 - 1. Blake Lane/Rt. 50
 - 2. Fairfax Circle
 - 3. Rt. 123/Rt. 50
 - 4. Kamp Washington (Rt. 29/Rt. 50)
 - 5. Waples Mill Rd./Rt. 50
 - 6. Stringfellow Rd./Rt. 50
 - 7. Walney Rd./Rt. 50
 - 8. Waples Mill Rd./Rt. 29
 - 9. Forum Drive/Rt. 29
 - 10. Clifton Rd./Rt. 29
 - 11. Rt. 28/New Braddock

NOTE: 1. Stone Road HOV access includes Stone Rd/New Braddock connection
2. All existing highway access points will remain

TRANSIT NETWORK

Enhanced Baseline Scenario with modifications to maximize bus use of the HOV lanes.

MULTI-MODAL INVESTMENT STRATEGY: SOV+LRT

#2

HIGHWAY NETWORK

Baseline Scenario with selected improvements for LRT station access

- + Add 1 SOV to I-66 from I-495 to Rt. 50 and maintain the existing concurrent flow HOV lane. Under this scenario I-66 will have 4 SOV lanes and 1 HOV lane for the peak period, peak direction and 5 SOV lanes during off-peak time on I-66 between I-495 and Rt. 50.

TRANSIT NETWORK

Enhanced Baseline Scenario

- + LRT to Manassas via Rt. 29 and Rt. 28 with stations at:

1. Vienna	8. Centreville Rd.
2. Fairfax Circle	9. New Braddock
3. Chain Bridge	10. Compton
4. Kamp Washington	11. Yorkshire
5. Government Center	12. Manassas Park Drive
6. Fairfax Co. Pkwy.	13. Manassas Park VRE
7. Union Mill	14. Manassas Downtown VRE
- + LRT via I-66 to Fairfax Co. Pkwy. to Rt. 50 to Rt. 28 with stations at:

1. Vienna	7. Chantilly East
2. Vicinity of Rt. 123	8. Chantilly West
3. Fair Oaks	9. Smithsonian
4. Fair Lakes East	10. McLearen Road
5. Fair Lakes North	11. Dulles Corners
6. Greenbriar	12. Dulles Airport
- + LRT along Rt. 28 between Rt. 50 and Rt. 29 with stations at:

1. Dulles Airport*	9. Lee Highway
2. Dulles Corners*	10. New Braddock*
3. McLearen Road*	11. Compton*
4. Smithsonian*	12. Yorkshire*
5. Chantilly West*	13. Manassas Park Drive*
6. Willard	14. Manassas Park VRE*
7. Sequoia Farms	15. Manassas Downtown VRE*
8. Braddock Rd.	

*These stations are shared between the east/west lines and the north/south lines.

- + Modifications to focus feeder bus service on LRT station sites

LRT Headways - Each line match Metrorail with timed transfers

Station Parking - Unconstrained

Parking Cost - \$1.00

Train Capacity - Unconstrained

Base Fare - Existing WMATA Fare Structure

Transfer Policy - No cost for transfer

MULTI-MODAL INVESTMENT STRATEGY: SOV+Metro

#3

HIGHWAY NETWORK

Baseline Scenario with selected improvements for Metrorail station access

- + Add 1 SOV to I-66 from I-495 to Rt. 50 and maintain the existing concurrent flow HOV lane. Under this scenario I-66 will have 4 SOV lanes and 1 HOV lane for the peak period, peak direction and 5 SOV lanes during off-peak time on I-66 between I-495 and Rt. 50.
- + Six Lanes on: Rt. 50 - Rt. 123 to Jermantown Road
Rt. 29 - Rt. 123 to I-66 at Centreville
- + Grade Separated Interchanges at:
 - 1. Blake Lane/Rt. 50
 - 2. Fairfax Circle
 - 3. Rt. 123/Rt. 50
 - 4. Kamp Washington (Rt. 29/Rt. 50)
 - 5. Waples Mill Rd./Rt. 50
 - 6. Stringfellow Rd./Rt. 50
 - 7. Walney Rd./Rt. 50
 - 8. Waples Mill Rd./Rt. 29
 - 9. Forum Drive/Rt. 29
 - 10. Clifton Rd./Rt. 29
 - 11. Rt. 28/New Braddock

TRANSIT NETWORK

Enhanced Baseline Scenario

- + Metrorail Extension to Gainesville with stations located at:
 - 1. Vicinity of Rt. 123
 - 2. Fair Oaks Mall
 - 3. Stringfellow Road
 - 4. Centreville
 - 5. Rt. 234/NVCC
 - 6. Gainesville
- + Modifications to focus feeder bus service on new Metrorail station sites

NOTE: 1. Centreville Station will include Stone Road/New Braddock Road connection

Headways - Same as existing

Station Parking - Unconstrained

Parking Costs - Same as existing (\$2.25 in Fairfax Co.; \$1.25 Elsewhere)

Train Capacity - Unconstrained

Base Fare - Existing WMATA Fare Structure (Note: no change in fare Vienna to Gainesville)

Transfer Policy - Same as today

MULTI-MODAL INVESTMENT STRATEGY: HOV+LRT

#4

HIGHWAY NETWORK

Baseline Scenario with selected improvements for LRT station access

- + Barrier Separated reversible HOV Lanes (2) on I-66 between I-495 and Rt. 29 (Gainesville)
- + Barrier Separated reversible HOV Lanes (2) on Rt. 29 between I-66 and Rt. 15
- + Existing Concurrent HOV Lanes are removed (Future Cross-section is 3 SOV+2 HOV during the peak period, peak direction.)
- + HOV Interchange Locations (to/from the east):
 - 1. I-495 (to/from north, south and east)
 - 2. Vienna Metro Station (to/from the west)
 - 3. Rt. 123 (to/from south, to/from east)
 - 4. Rt. 50 (to/from the west)
 - 5. Monument Drive (both east and west)
 - 6. Stringfellow Road
 - 7. Stone Road (to/from east and west)
 - 8. Slip Ramp East of Rt. 28 Bypass
 - 9. Slip Ramp East of 234
 - 10. Rt. 29 (Gainesville)

NOTE: 1. Stone Road HOV access includes Stone Rd/New Braddock connection
2. All existing highway access points will remain

TRANSIT NETWORK

Enhanced Baseline Scenario with modifications to maximize bus use of the HOV lanes.

- + LRT to Manassas via Rt. 29 and Rt. 28 with stations at:
 - 1. Vienna
 - 2. Fairfax Circle
 - 3. Chain Bridge
 - 4. Kamp Washington
 - 5. Government Center
 - 6. Fairfax Co. Pkwy.
 - 7. Union Mill
 - 8. Centreville Rd.
 - 9. New Braddock
 - 10. Compton
 - 11. Yorkshire
 - 12. Manassas Park Drive
 - 13. Manassas Park VRE
 - 14. Manassas Downtown VRE
- + LRT via I-66 to Fairfax Co. Pkwy. to Rt. 50 to Rt. 28 with stations at:
 - 1. Vienna
 - 2. Vicinity of Rt. 123
 - 3. Fair Oaks
 - 4. Fair Lakes East
 - 5. Fair Lakes North
 - 6. Greenbriar
 - 7. Chantilly East
 - 8. Chantilly West
 - 9. Smithsonian
 - 10. McLearen Road
 - 11. Dulles Corners
 - 12. Dulles Airport

- + LRT along Rt. 28 between Rt. 50 and Rt. 29 with stations at:
- | | |
|--------------------|----------------------------|
| 1. Dulles Airport* | 9. Lee Highway |
| 2. Dulles Corners* | 10. New Braddock* |
| 3. McLearen Road* | 11. Compton* |
| 4. Smithsonian* | 12. Yorkshire* |
| 5. Chantilly West* | 13. Manassas Park Drive* |
| 6. Willard | 14. Manassas Park VRE* |
| 7. Sequoia Farms | 15. Manassas Downtown VRE* |
| 8. Braddock Rd. | |

*These stations are shared between the east/west lines and the north/south lines.

- + Modifications to focus feeder bus service on LRT station sites

LRT Headways - Each Line Match Metrorail with timed transfers

Station Parking - Unconstrained

Parking Cost - \$1.00

Train Capacity - Unconstrained

Base Fare - Existing WMATA Fare Structure

Transfer Policy - No cost for transfer

MULTI-MODAL INVESTMENT STRATEGY: HOV+Metro

#5

HIGHWAY NETWORK

Baseline Scenario with selected improvements for Metrorail station access

- + Barrier Separated reversible HOV Lanes (2) on I-66 between I-495 and Rt. 29 (Gainesville)
- + Barrier Separated reversible HOV Lanes (2) on Rt. 29 between I-66 and Rt. 15
- + Existing Concurrent HOV Lanes are removed
(Future Cross-section is 3 SOV+2 HOV during the peak period, peak direction.)
- + HOV Interchange Locations (to/from the east):

1. I-495 (to/from north, south and east)	6. Stringfellow Road
2. Vienna Metro Station (to/from the west)	7. Stone Road (to/from east and west)
3. Rt. 123 (to/from south, to/from east)	8. Slip Ramp East of Rt. 28 Bypass
4. Rt. 50 (to/from the west)	9. Slip Ramp East of 234
5. Monument Drive (both east and west)	10. Rt. 29 (Gainesville)

NOTE: 1. Stone Road HOV access includes Stone Rd/New Braddock connection
 2. All existing highway access points will remain

TRANSIT NETWORK

Enhanced Baseline Scenario with modifications to maximize bus use of the HOV lanes.

- + Metrorail Extension to Centreville with stations located at:

1. Vicinity of Rt. 123
2. Fair Oaks Mall
3. Stringfellow Road
4. Centreville
- + Modifications to focus feeder bus service on new Metro station sites

NOTE: 1. Centreville Station will include Stone Road/New Braddock Road connection

Headways - Same as existing

Station Parking - Unconstrained

Parking Costs - Same as existing (\$2.25 in Fairfax Co.)

Train Capacity - Unconstrained

Base Fare - Existing WMATA Fare Structure

Transfer Policy - Same as today

MULTI-MODAL INVESTMENT STRATEGY: LRT+Metro

#6

HIGHWAY NETWORK

Baseline Scenario with selected improvements for Metrorail/LRT station access

TRANSIT NETWORK

Enhanced Baseline Scenario

- + Metrorail Extension to Centreville with stations located at:
 1. Vicinity of Rt. 123
 2. Fair Oaks Mall
 3. Stringfellow Road
 4. Centreville

NOTE: 1. Centreville Station will include Stone Road/New Braddock Road connection

- + LRT from Dulles to Manassas Airport Area via Rt. 28 and Rt. 28 Bypass with stations at:

1. Dulles Airport	9. Centreville
2. Dulles Corners	10. Bull Run Reg. Park
3. McLearen Road	11. Lomond
4. Smithsonian	12. Sudley Road
5. Chantilly West	13. Ashton
6. Willard	14. Loral Park
7. Sequoia Farms	15. Godwin Drive
8. Sully Park Drive	16. Manassas Airport

- + Modifications to focus feeder bus service on new Metrorail and LRT station sites

Metrorail Headways - Same as existing

LRT Headways - Each Line Match Metrorail with timed transfers

Metrorail and LRT Station Parking - Unconstrained

Metrorail Parking Costs - Same as existing (\$2.25 in Fairfax Co.)

LRT Parking Costs - \$1.00

Metrorail and LRT Train Capacity - Unconstrained

Metrorail and LRT Base Fare - Existing WMATA Fare Structure

Metrorail Transfer Policy - Same as today

LRT Transfer Policy - No cost for transfer

MULTI-MODAL INVESTMENT STRATEGY:

SOV+HOV+LRT

#7

HIGHWAY NETWORK

Baseline Scenario with selected improvements for LRT station access

- + Add 1 SOV to I-66 from I-495 to Rt. 50 and eliminate existing concurrent flow HOV lanes. This will effectively make 4 continuous SOV lanes in each direction on I-66 from I-495 to Rt. 29 (Gainesville).
- + Barrier Separated reversible HOV Lanes (2) on I-66 between I-495 and Rt. 29 (Gainesville)
- + Barrier Separated reversible HOV Lanes (2) on Rt. 29 between I-66 and Rt. 15
- + Existing Concurrent HOV Lanes are converted to SOV
(Future Cross-section is 4 SOV+2 HOV in the peak direction from I-495 to Gainesville)
- + HOV Interchange Locations (to/from the east):

1. I-495 (to/from north, south and east)	6. Stringfellow Road
2. Vienna Metro Station (to/from the west)	7. Stone Road (to/from east and west)
3. Rt. 123 (to/from south, to/from east)	8. Slip Ramp East of Rt. 28 Bypass
4. Rt. 50 (to/from the west)	9. Slip Ramp East of 234
5. Monument Drive (both east and west)	10. Rt. 29 (Gainesville)

- NOTE:
- 1. Stone Road HOV access includes Stone Rd/New Braddock connection
 - 2. All existing highway access points will remain

TRANSIT NETWORK

Enhanced Baseline Scenario with modifications to maximize bus use of the HOV lanes.

- + LRT to Manassas via Rt. 29 and Rt. 28 with stations at:

1. Vienna	8. Centreville Rd.
2. Fairfax Circle	9. New Braddock
3. Chain Bridge	10. Compton
4. Kamp Washington	11. Yorkshire
5. Government Center	12. Manassas Park Drive
6. Fairfax Co. Pkwy.	13. Manassas Park VRE
7. Union Mill	14. Manassas Downtown VRE

+ LRT via I-66 to Fairfax Co. Pkwy. to Rt. 50 to Rt. 28 with stations at:

- | | |
|------------------------|--------------------|
| 1. Vienna | 7. Chantilly East |
| 2. Vicinity of Rt. 123 | 8. Chantilly West |
| 3. Fair Oaks | 9. Smithsonian |
| 4. Fair Lakes East | 10. McLearen Road |
| 5. Fair Lakes North | 11. Dulles Corners |
| 6. Greenbriar | 12. Dulles Airport |

+ LRT along Rt. 28 between Rt. 50 and Rt. 29 with stations at:

- | | |
|--------------------|----------------------------|
| 1. Dulles Airport* | 9. Lee Highway |
| 2. Dulles Corners* | 10. New Braddock* |
| 3. McLearen Road* | 11. Compton* |
| 4. Smithsonian* | 12. Yorkshire* |
| 5. Chantilly West* | 13. Manassas Park Drive* |
| 6. Willard | 14. Manassas Park VRE* |
| 7. Sequoia Farms | 15. Manassas Downtown VRE* |
| 8. Braddock Rd. | |

*These stations are shared between the east/west lines and the north/south lines.

+ Modifications to focus feeder bus service on LRT station sites

LRT Headways - Each Line Match Metrorail with timed transfers

Station Parking - Unconstrained

Parking Cost - \$1.00

Train Capacity - Unconstrained

Base Fare - Existing WMATA Fare Structure

Transfer Policy - No cost for transfer

MULTI-MODAL INVESTMENT STRATEGY:

SOV+HOV+Metro

#8

HIGHWAY NETWORK

Baseline Scenario with selected improvements for Metrorail station access

- + Add 1 SOV to I-66 from I-495 to Rt. 50 and eliminate existing concurrent flow HOV lanes. This will effectively make 4 continuous SOV lanes in each direction on I-66 from I-495 to Rt. 29 (Gainesville).
- + Six Lanes on: Rt. 50 - Rt. 123 to Jermantown Road
Rt. 29 - Rt. 123 to I-66 at Centreville
- + Grade Separated Interchanges at:
 - 1. Blake Lane/Rt. 50
 - 2. Fairfax Circle
 - 3. Rt. 123/Rt. 50
 - 4. Kamp Washington (Rt. 29/Rt. 50)
 - 5. Waples Mill Rd./Rt. 50
 - 6. Stringfellow Rd./Rt. 50
 - 7. Walney Rd./Rt. 50
 - 8. Waples Mill Rd./Rt. 29
 - 9. Forum Drive/Rt. 29
 - 10. Clifton Rd./Rt. 29
 - 11. Rt. 28/New Braddock
- + Barrier Separated reversible HOV Lanes (2) on I-66 between I-495 and Rt. 29 (Gainesville)
- + Barrier Separated reversible HOV Lanes (2) on Rt. 29 between I-66 and Rt. 15
- + Existing Concurrent HOV Lanes are converted to SOV
(Future Cross-section is 4 SOV+2 HOV in the peak direction from I-495 to Gainesville)
- + HOV Interchange Locations (to/from the east):
 - 1. I-495 (to/from north, south and east)
 - 2. Vienna Metro Station (to/from the west)
 - 3. Rt. 123 (to/from south, to/from east)
 - 4. Rt. 50 (to/from the west)
 - 5. Monument Drive (both east and west)
 - 6. Stringfellow Road
 - 7. Stone Road (to/from east and west)
 - 8. Slip Ramp East of Rt. 28 Bypass
 - 9. Slip Ramp East of 234
 - 10. Rt. 29 (Gainesville)

- NOTE:
- 1. Stone Road HOV access includes Stone Rd/New Braddock connection
 - 2. All existing highway access points will remain

TRANSIT NETWORK

Enhanced Baseline Scenario with modifications to maximize bus use of the HOV lanes.

- + Metrorail Extension to Centreville with stations located at:
 - 1. Vicinity of Rt. 123
 - 2. Fair Oaks Mall

- 3. Stringfellow Road
- 4. Centreville

+ Modifications to focus feeder bus service on new Metrorail station sites

NOTE: 1. Centreville Station will include Stone Road/New Braddock Road connection

Headways - Same as existing

Station Parking - Unconstrained

Parking Costs - Same as existing (\$2.25 in Fairfax Co.)

Train Capacity - Unconstrained

Base Fare - Existing WMATA Fare Structure

Transfer Policy - Same as today

MULTI-MODAL INVESTMENT STRATEGY:

SOV+LRT+Metro

#9

HIGHWAY NETWORK

Baseline Scenario with selected improvements for Metrorail and LRT station access

- + Add 1 SOV to I-66 from I-495 to Rt. 50 (4 SOV + 1 HOV)
- + Six Lanes on: Rt. 50 - Rt. 123 to Jermantown Road
Rt. 29 - Rt. 123 to I-66 at Centreville
- + Grade Separated Interchanges at:
 - 1. Blake Lane/Rt. 50
 - 2. Fairfax Circle
 - 3. Rt. 123/Rt. 50
 - 4. Kamp Washington (Rt. 29/Rt. 50)
 - 5. Waples Mill Rd./Rt. 50
 - 6. Stringfellow Rd./Rt. 50
 - 7. Walney Rd./Rt. 50
 - 8. Waples Mill Rd./Rt. 29
 - 9. Forum Drive/Rt. 29
 - 10. Clifton Rd./Rt. 29
 - 11. Rt. 28/New Braddock

TRANSIT NETWORK

Enhanced Baseline Scenario

- + Metrorail Extension to Centreville with stations located at:
 - 1. Vicinity of Rt. 123
 - 2. Fair Oaks Mall
 - 3. Stringfellow Road
 - 4. Centreville

NOTE: 1. Centreville Station will include Stone Road/New Braddock Road connection

- + LRT from Dulles to Manassas Airport Area via Rt. 28 and Rt. 28 Bypass with stations at:
 - 1. Dulles Airport
 - 2. Dulles Corners
 - 3. McLearen Road
 - 4. Smithsonian
 - 5. Chantilly West
 - 6. Willard
 - 7. Sequoia Farms
 - 8. Sully Park Drive
 - 9. Centreville
 - 10. Bull Run Reg. Park
 - 11. Lomond
 - 12. Sudley Road
 - 13. Ashton
 - 14. Loral Park
 - 15. Godwin Drive
 - 16. Manassas Airport
- + Modifications to focus feeder bus service on new Metrorail and LRT station sites

Metrorail Headways - Same as existing

LRT Headways - Each Line Match Metrorail with timed transfers

Metrorail and LRT Station Parking - Unconstrained

Metrorail Parking Costs - Same as existing (\$2.25 in Fairfax Co.)

LRT Parking Costs - \$1.00

Metrorail and LRT Train Capacity - Unconstrained

Metrorail and LRT Base Fare - Existing WMATA Fare Structure

Metrorail Transfer Policy - Same as today

LRT Transfer Policy - No cost for transfer

MULTI-MODAL INVESTMENT STRATEGY:

HOV+LRT+Metro

#10

HIGHWAY NETWORK

Baseline Scenario with selected improvements for Metrorail and LRT station access

- + Barrier Separated reversible HOV Lanes (2) on I-66 between I-495 and Rt. 29 (Gainesville)
- + Barrier Separated reversible HOV Lanes (2) on Rt. 29 between I-66 and Rt. 15
- + Existing Concurrent HOV Lanes are removed (Future Cross-section is 3 SOV+2 HOV)
- + HOV Interchange Locations (to/from the east):

1. I-495 (to/from north, south and east)	6. Stringfellow Road
2. Vienna Metro Station (to/from the west)	7. Stone Road (to/from east and west)
3. Rt. 123 (to/from south, to/from east)	8. Slip Ramp East of Rt. 28 Bypass
4. Rt. 50 (to/from the west)	9. Slip Ramp East of 234
5. Monument Drive (both east and west)	10. Rt. 29 (Gainesville)

NOTE: 1. Stone Road HOV access includes Stone Rd/New Braddock connection
2. All existing highway access points will remain

TRANSIT NETWORK

Enhanced Baseline Scenario with modifications to maximize bus use of the HOV lanes.

- + Metrorail Extension to Centreville with stations located at:

1. Vicinity of Rt. 123
2. Fair Oaks Mall
3. Stringfellow Road
4. Centreville
- NOTE: 1. Centreville Station will include Stone Road/New Braddock Road connection
- + LRT from Dulles to Manassas Airport Area via Rt. 28 and Rt. 28 Bypass with stations at:

1. Dulles Airport	9. Centreville
2. Dulles Corners	10. Bull Run Reg. Park
3. McLearen Road	11. Lomond
4. Smithsonian	12. Sudley Road
5. Chantilly West	13. Ashton
6. Willard	14. Loral Park
7. Sequoia Farms	15. Godwin Drive
8. Sully Park Drive	16. Manassas Airport
- + Modifications to focus feeder bus service on new Metrorail and LRT station sites

Metrorail Headways - Same as existing

LRT Headways - Each Line Match Metrorail with timed transfers

Metrorail and LRT Station Parking - Unconstrained

Metrorail Parking Costs - Same as existing (\$2.25 in Fairfax Co.)

LRT Parking Costs - \$1.00

Metrorail and LRT Train Capacity - Unconstrained

Metrorail and LRT Base Fare - Existing WMATA Fare Structure

Metrorail Transfer Policy - Same as today

LRT Transfer Policy - No cost for transfer

MULTI-MODAL INVESTMENT STRATEGY:

I-66 Express/Local

#11

HIGHWAY NETWORK

Baseline Scenario

- + Widen I-66 to six lanes in each direction with an express/local configuration between I-495 and Rt. 29 (Gainesville).
- + Assume full express ingress/egress between all interchanges and express-express connection at Beltway.
- + Widen I-495 to six lanes in each direction from I-95 to Dulles Toll Road.

TRANSIT NETWORK

Enhanced Baseline Scenario

MULTI-MODAL INVESTMENT STRATEGY:

#12

Super Bus

HIGHWAY NETWORK

Baseline Scenario

TRANSIT NETWORK

Enhanced Baseline Scenario

- + Significant bus system improvements including expansion of existing service, provision of new service between various origins and destinations, and reduced bus headways.
- + Increased frequency of service on Metrorail to Vienna.

NOTE: Specific elements of this strategy are being refined based on comments received at the 9-10-97 TAC subcommittee meeting.

MULTI-MODAL INVESTMENT STRATEGY:

County Highway Plan

#13

HIGHWAY NETWORK

Baseline Scenario

+ Selected roadway improvements that are part of County Comprehensive Plans that are not part of the CLRP as specified in Table 1.

TABLE 1
FACILITY IMPROVEMENTS FROM COMPREHENSIVE PLANS NOT IN THE CLRP

FACILITY	COUNTY	FROM	TO	NUMBER OF LANES		
				EXISTING	CLRP 1/ FY 97-02	COUNTY PLAN
Rt 7	Fairfax	WCL Falls Church	I-495	4	4	6
Rt 28	Fairfax	FF Co Line	Rt 29	4	6 study	6
Rt 28	Fairfax	I-66	Dulles Toll Road	6	8 study	8
Rt 28 Bypass	Fairfax	FF Co Line	I-66	0	4	6
Rt 28 Bypass	Fairfax	I-66	FF/LDN Co Line	0	4 study	4
Rt 29	Fairfax	I-495	Graham Rd	4	4	6
Rt 29	Fairfax	Pleasant Valley Dr	WCL Fairfax	4	6 study	6
Rt 123	Fairfax	I-66	Vienna CL	4	4	6
Rt 608	Fairfax	Reston Parkway	Centreville Rd	2	2	4
Stone-Braddock Connector	Fairfax	Braddock/Rt 28	Stone/Lilva	0-2	0-2	4
Stringfellow Rd	Fairfax	Rt 29	Braddock	2	2	4
Shirley Gate	Fairfax	Rt 29	Rt 50	4	4	6
Shirley Gate	Fairfax	Rt 50	I-66	4	4	4
Frying Pan Rd	Fairfax	Rt 28	Centreville Rd	2-4	2-4	6
Pleasant Valley Rd	Fairfax	Rt 29	Rt 50	2-4	2-4	4
Braddock Road	Fairfax	Stone Rd	Flat Lick	2-4	2-4	4
Fox Mill Rd	Fairfax	Reston Pkwy	Monroe	2	2	4
Monroe Street	Fairfax	West Ox Road	Fox Mill Rd	2	2	4
Sunset Hills Rd	Fairfax	Wiehle Ave	FF Co Pkwy	4	4	6
Gallows Rd	Fairfax	Old Court House Rd	I-495	4-6	4-6	6

FACILITY	COUNTY	FROM	TO	NUMBER OF LANES		
				EXISTING	CLRP 1/ FY 97-02	COUNTY PLAN
Gallows Rd	Fairfax	I-495	Rt 236	4	4	4
Walney Rd	Fairfax	US 50	Poplar Tree Rd			4
Poplar Tree Rd	Fairfax	Stringfellow Rd	Westfields Blvd			4
Reston Pkwy	Fairfax	Sunrise Valley Dr	Baron Cameron Ave			
Rt 28 Bypass	Loudoun	FF/LDN Co line	Rt 50	0	4 study	4
Rt 28	Prince William	NCL Manassas	FF Co Line	4	6 study	6
Rt 29	Prince William	FQ Co line	Gainesville	4	6 study	6
Rt 234	Prince William	Poplar Ford	Rt 15	2	2	4
Rt 234 Bypass	Prince William	I-66	PW/LDN Co line	0	0	4
Heathcote Blvd	Prince William	Catharpin	Rt 15	0	0	4
Haymarket Bypass	Prince William	Rt 29	Rt 15	0	0	4
Artemus Road	Prince William	PW/LDN Co line	Rt 15	0	0	4

Notes:

1/ Study projects are not funded for construction.

TRANSIT NETWORK

Enhanced Baseline Scenario

MULTI-MODAL INVESTMENT STRATEGY:

#14

Generic Rail to Gainesville

HIGHWAY NETWORK

Baseline Scenario with selected improvements for rail station access

TRANSIT NETWORK

Enhanced Baseline Scenario

- + Rail Extension from Vienna to Gainesville in the median of I-66 with station locations at:
 1. Vicinity of Rt. 123
 2. Fair Oaks Mall
 3. Stringfellow Road
 4. Centreville
 5. Rt. 234/NVCC
 6. Gainesville
- + Modifications to focus feeder bus service on new rail station sites

NOTE: 1. Centreville Station will include Stone Road/New Braddock Road connection

Headways - Same as existing

Station Parking - Unconstrained

Parking Costs - Same as existing (\$2.25 in Fairfax Co.; \$1.25 Elsewhere)

Train Capacity - Unconstrained

Base Fare - Existing WMATA Fare Structure (Note: no change in fare Vienna to Gainesville)

Transfer Policy - Same as today; requires a rail-to-rail transfer at Vienna

NOTE: The "generic rail" element of this strategy could be an extension of the Metrorail system, a "Metro-like" rail system or a light rail transit system. Depending on the technology and operator selected, a transfer to existing Metrorail service at Vienna may or may not be required. For purposes of comparison to Strategy #3, it is recommended that this strategy be modeled assuming a "Metro-like" rail system with a transfer required at Vienna.

MULTI-MODAL INVESTMENT STRATEGY:

#15

Virginia Railway Express (VRE) to Gainesville

HIGHWAY NETWORK

Baseline Scenario

TRANSIT NETWORK

Enhanced Baseline Scenario

- + VRE Extension from Downtown Manassas VRE Station to Gainesville with stations located at:
 1. Rt. 234 Bypass
 2. Gainesville

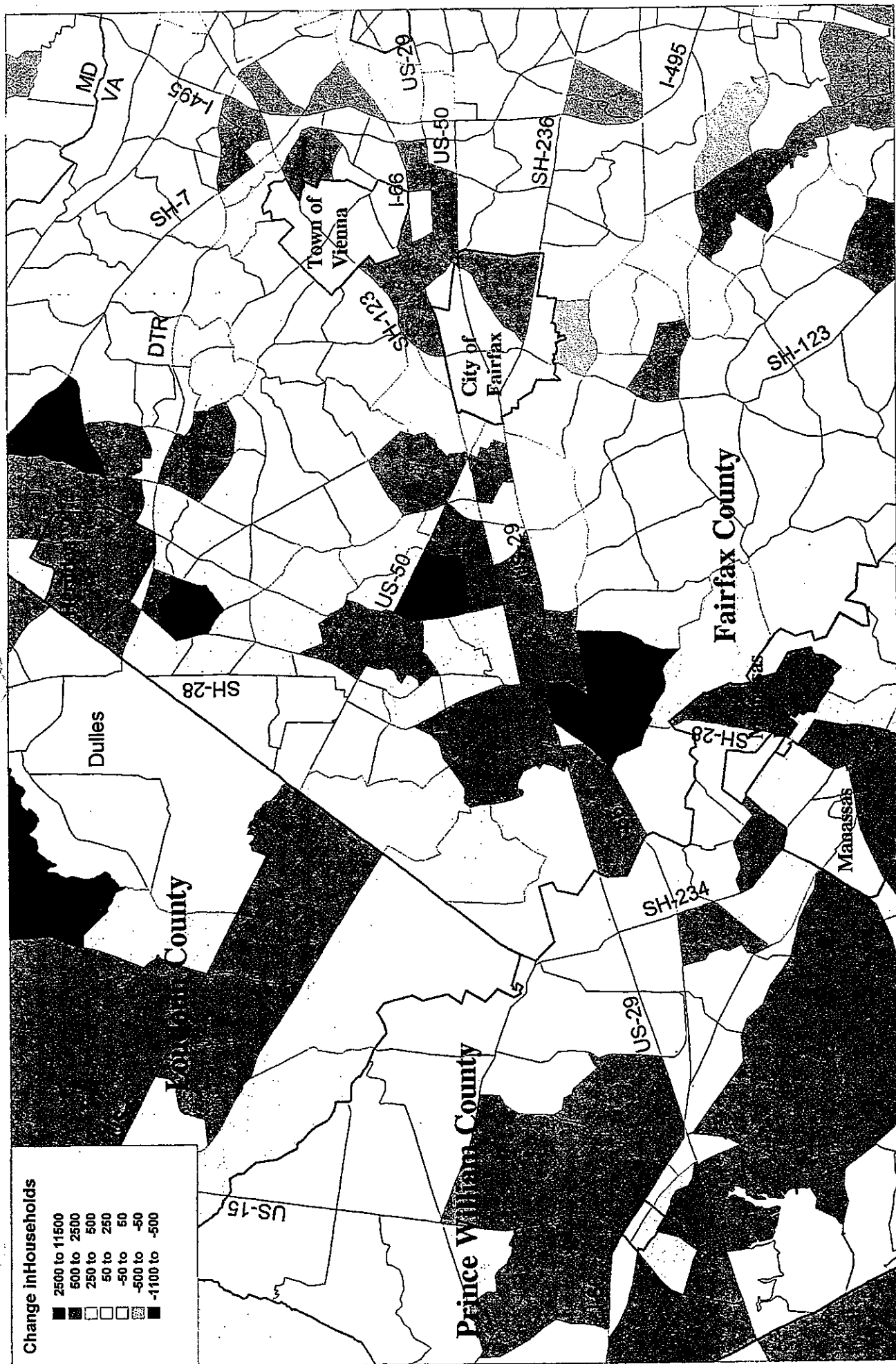
Headways - Same as existing during peak periods; add reverse services on hourly frequency and midday service on hourly frequency

Station Parking - Unconstrained

Parking Costs - Same as existing

Train Capacity - Unconstrained

Base Fare -

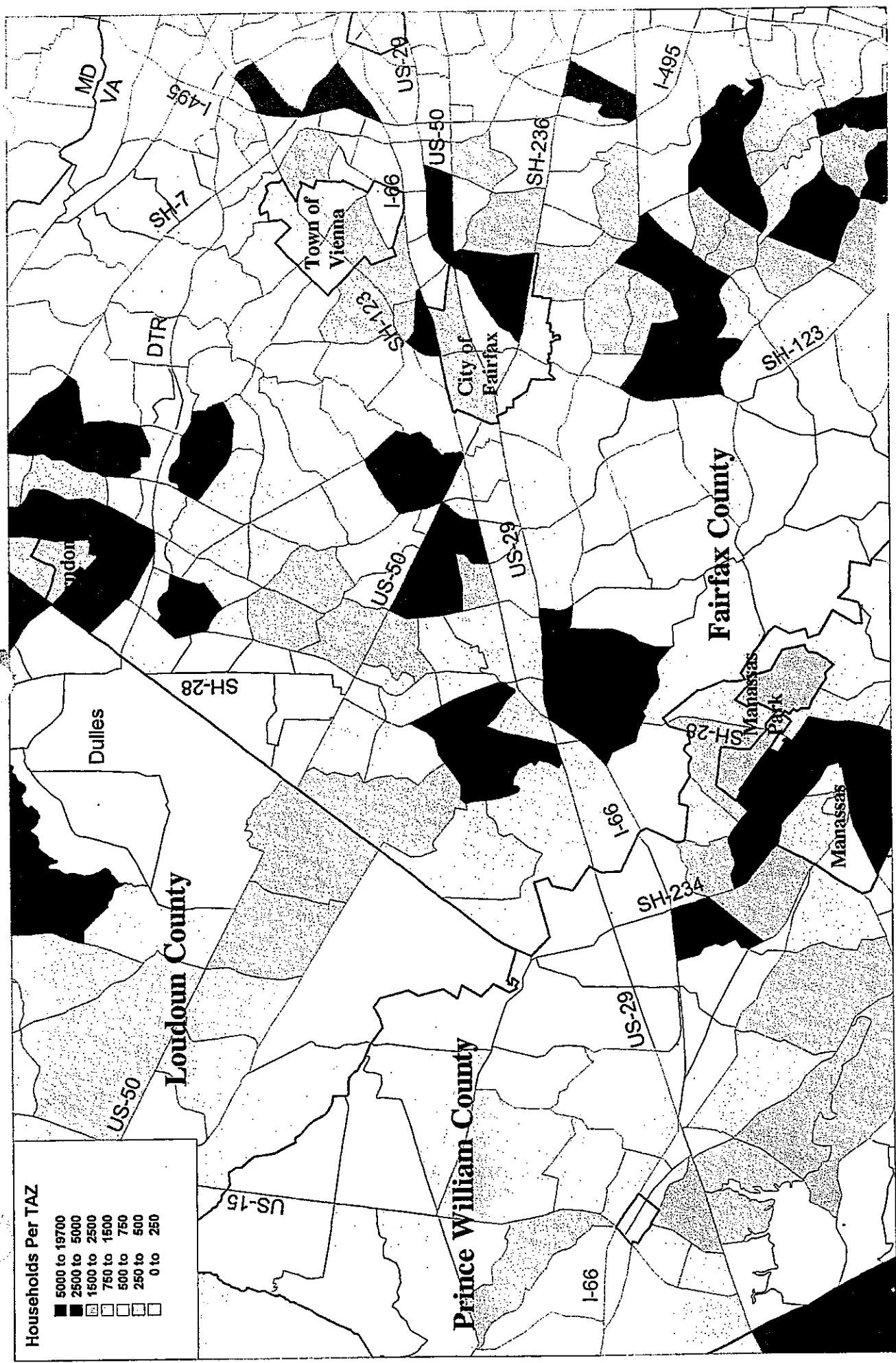


2020/1990 Change in Households Per Travel Analysis Zone (TAZ)

I-66 Major
Investment
Study



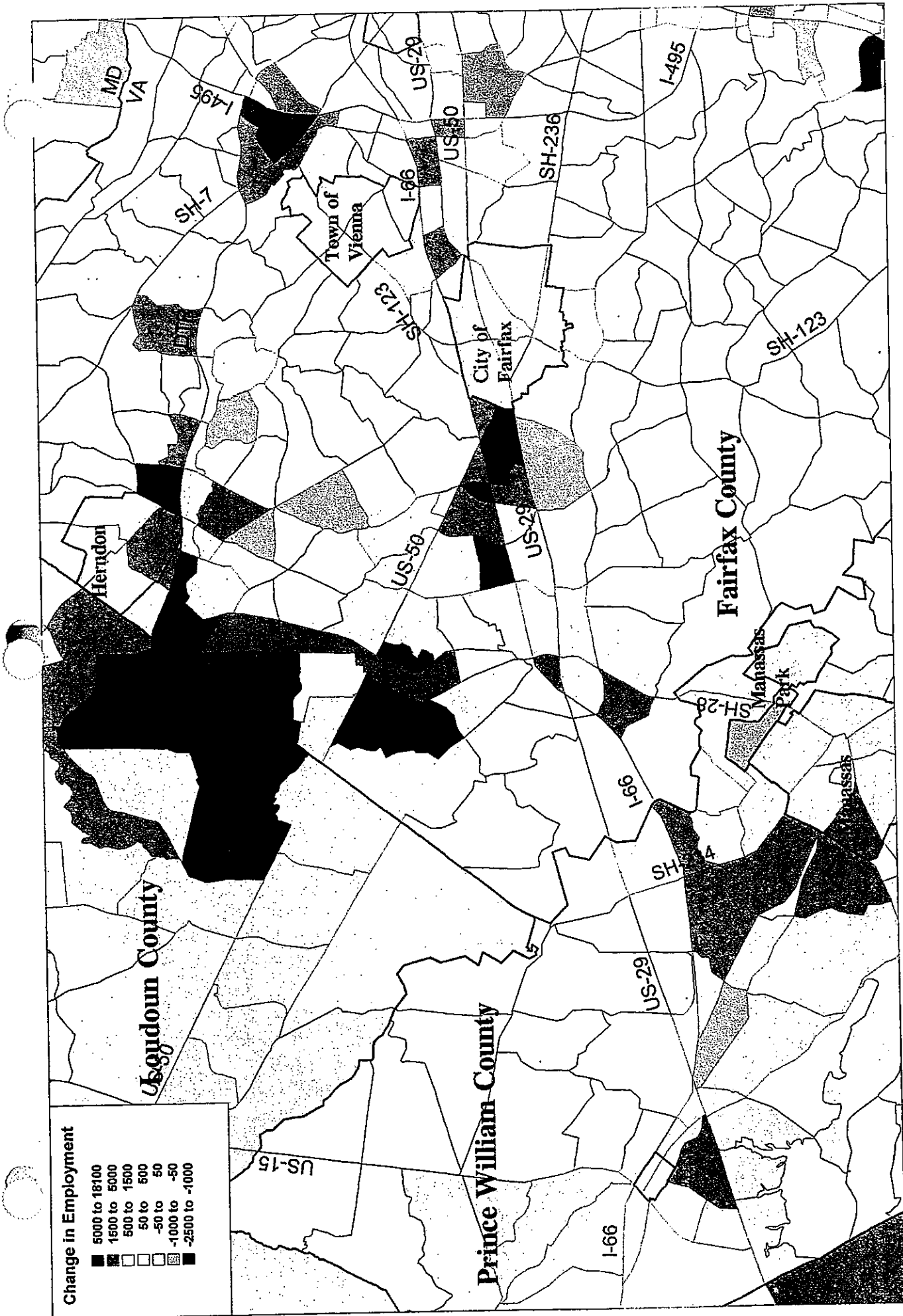
September 17, 1997



**2020 Households Per
Travel Analysis Zone (TAZ)**

I-66 Major Investment Study

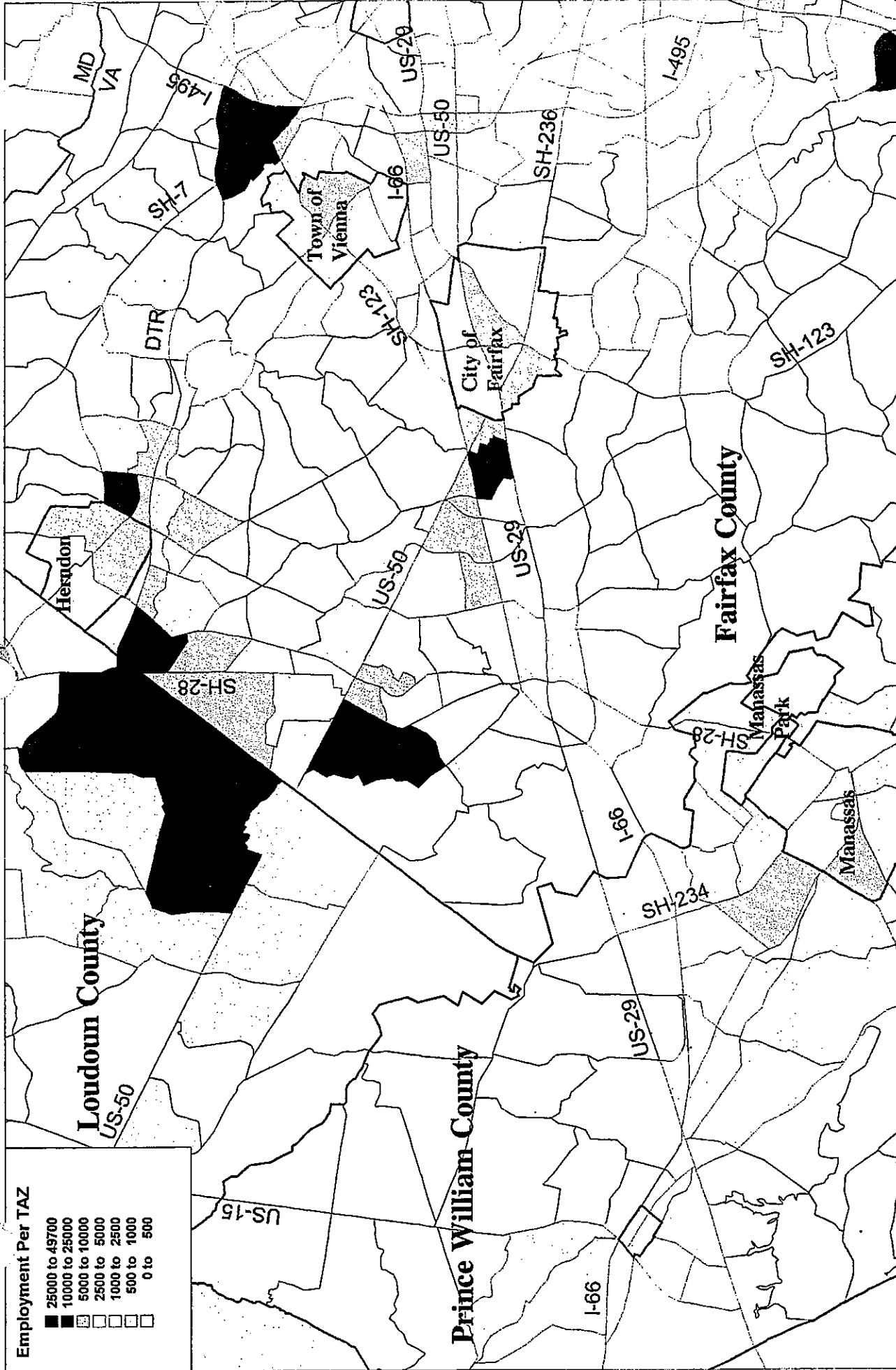




2020/1990 Change
in Employment Per
Travel Analysis Zone (TAZ)

I-66 Major Investment Study

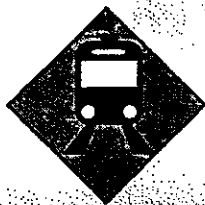
VHIT **BRW**



2020 Employment Per Travel Analysis Zone (TAZ)

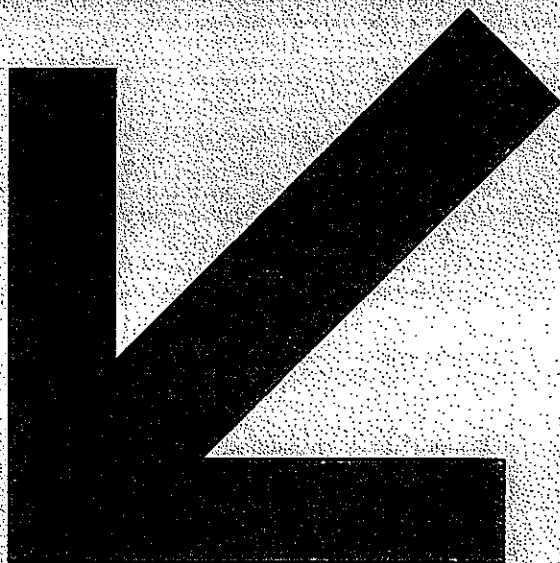
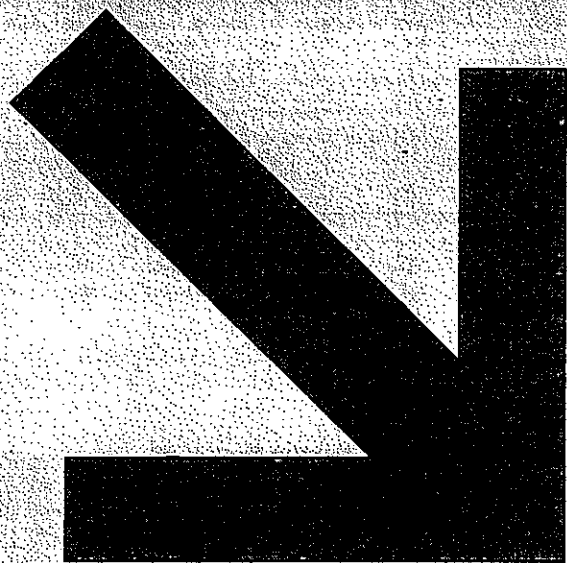
I-66 Major
Investment
Study



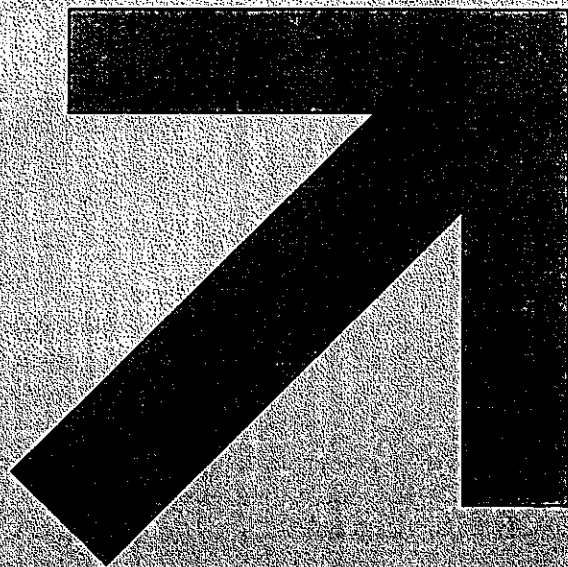


I-66
CORRIDOR

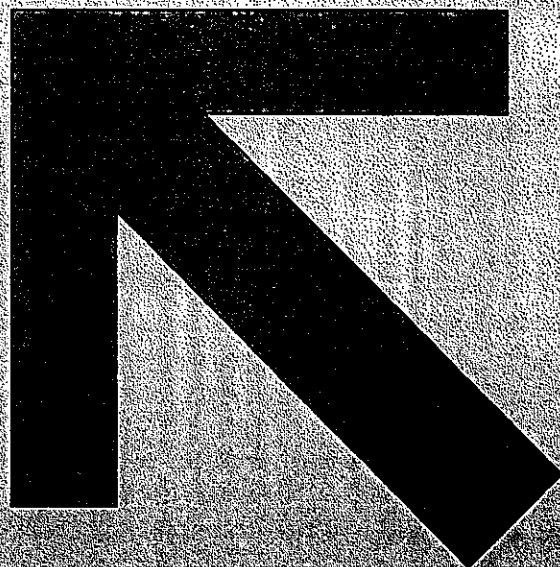
**Major
Investment
Study**



Screen 2 Multi-Modal Strategies



August, 1997



SCREEN 2 MULTI-MODAL STRATEGIES

Prepared for:

The Commonwealth of Virginia
Department of Rail and Public Transportation
and
Department of Transportation

Prepared by:

BRW, Inc.

August 13, 1997

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1.0 INTRODUCTION

The I-66 Corridor Major Investment Study (MIS) is being conducted to develop a regional consensus on a comprehensive transportation investment strategy appropriate to address transportation issues in the corridor over the next 20 to 25 years which:

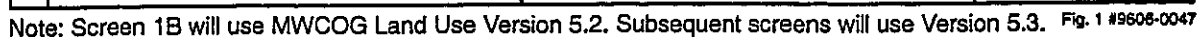
- Responds to current imbalances between existing transportation supply and demand;
- Supports anticipated growth and development in the corridor;
- Integrates the multi-modal transportation systems in the corridor; and
- Supports previous and on-going regional and local transportation planning processes.

The preferred transportation investment strategy will be identified based on a successive, iterative evaluation of modal elements and alternative strategies through a multi-step screening process. This screening process, which is summarized in Figure 1 will identify those elements and strategies which best meet the transportation needs of the corridor. At the conclusion of each screen, the most promising elements and strategies will be refined, modified, and reformulated to improve the extent to which the alternative addresses corridor needs.

The purpose of this report is to document the multi-modal transportation investment strategies recommended for evaluation in Screen 2 of the evaluation process. The Screen 1 evaluation considered single-mode transportation elements. The Screen 2 strategies represent multi-modal combinations of the transportation elements reviewed in Screen 1. The results of the Screen 2 evaluation will be used to define refined multi-modal strategies incorporating the most promising features of the Screen 2 strategies for evaluation in Screen 3.

Screen 2 Multi-Modal Investment Strategies (MMIS's) were discussed at meetings of the I-66 Corridor MIS Technical Advisory Committee (TAC) on November 21, 1996, December 5, 1996, February 20, 1997 and May 29, 1997. The I-66 Corridor MIS Policy Advisory Committee (PAC) reviewed the Screen 2 multi-modal investment strategies at their meetings on March 13, 1997 and August 7, 1997. Input from the TAC and PAC has been incorporated into this set of strategies recommended for evaluation in Screen 2.

Overview of I-66 MIS Alternative Elements/Strategies Evaluation Process



2.0 PRINCIPLES GUIDING THE DEVELOPMENT OF SCREEN 2 STRATEGIES

- The Screen 2 strategies should be formulated as complete alternatives, likely to solve the transportation problems in the corridor. The transportation problems identified in the study are listed in Table 1. Corridor goals and objectives are listed in Table 2.
- Analyses completed to date (Screen 1B travel forecasts) indicate that none of the single-mode alternative elements in isolation will solve the transportation problems in the corridor.
- The Planning Assumptions adopted by the PAC (summarized in Table 3) should be used to guide the development of Screen 2 strategies.
- The Screen 2 strategies should represent a range of modal choices including strategies focusing on transit improvements and strategies focusing on highway improvements.
- The Screen 2 evaluation will include an evaluation of both the Baseline Alternative (the Constrained Long Range Plan [CLRP]) and the Enhanced Baseline Alternative (the CLRP with significant bus system enhancements). The Enhanced Baseline is intended to represent the low capital cost Transportation System Management/Travel Demand Management (TSM/TDM) alternative required to be evaluated in an environmental review.
- All of the Screen 2 strategies will include a level of bus transit service comparable to that defined as part of the Enhanced Baseline alternative. The transit service will be reoriented to take advantage of fixed transit facilities (rail or high occupancy vehicle [HOV]) provided as part of each strategy.
- The terminus of each of the modal elements will be evaluated and further defined as an outcome of the Screen 2 evaluation.

TABLE 1
I-66 CORRIDOR TRANSPORTATION PROBLEMS

TRANSPORTATION SERVICE/MOBILITY
<ul style="list-style-type: none"> Existing Vehicular Congestion in Both Peak Periods. Forecast of Worse Congestion and an Increase in Vehicle-Miles of Travel in the Year 2020. Insufficient Transit Accessibility to Employment Opportunities in Corridor. Lack of Management and Coordination of Truck Movement in the Corridor. Lack of Coordination and Management of the Multi-Modal Transportation System in the Corridor.
ADJACENCY AND AREA-WIDE ENVIRONMENTAL IMPACTS
<ul style="list-style-type: none"> Inadequate Right-of-Way and Physical Limitations on Ability to Expand Corridor Infrastructure. Existing and Forecasted Dispersion of Population and Employment Throughout the Corridor and the Associated Travel Patterns. Concerns about Air Quality
TRANSPORTATION INVESTMENT
<ul style="list-style-type: none"> Lack of Financial Resources to Pay for Needed Transportation Facilities and Services.

2-5-96

TABLE 2
I-66 CORRIDOR GOALS AND OBJECTIVES

TRANSPORTATION SERVICE/MOBILITY
<ul style="list-style-type: none"> • Accommodate Existing and Future Mobility Demands. • Improve Regional Access to I-66 Corridor Activity Centers and Improve Access from the I-66 Corridor to the Region. • Improve Goods Movement.
ADJACENCY AND AREA-WIDE ENVIRONMENTAL IMPACTS
<ul style="list-style-type: none"> • Coordinate the Transportation Improvements to Complement Existing and Future Land Uses. • Minimize the Adverse Transportation Related Environmental Impacts and Foster Positive Environmental Impacts with Transportation Improvements.
TRANSPORTATION INVESTMENT
<ul style="list-style-type: none"> • Provide a Cost-Effective Investment Strategy for the I-66 Corridor.

2-5-96

TABLE 3
SUMMARY OF PLANNING ASSUMPTIONS TO GUIDE THE DEVELOPMENT OF
SCREEN 2 MULTI-MODAL INVESTMENT STRATEGIES

1. *The I-66 Corridor MIS assumes the transportation facilities and services outside the primary study area as defined in the most recent CLRP.*
2. *The selected investment strategy will meet air quality conformity requirements.*
3. *Alternatives will be evaluated using the MWCOG Round 5.3 land use projections.*
4. *The fixed-guideway transit component (or components) of an alternative should perform a line haul function and use buses as a feeder to the fixed-guideway system.*
5. *The existing Norfolk-Southern rail right-of-way from Manassas-Gainesville-Haymarket will be available for the extension of VRE service.*
6. *I-66 east of the Capital Beltway and the HOV lanes currently included in the CLRP for the Capital Beltway will operate as an HOV-3+ facility in the peak direction during peak hours.*
7. *The primary access route between the I-66 corridor and Tysons Corner will continue to be along I-66 and I-495.*
8. *A transfer at the Vienna Metrorail station between LRT service and Metrorail service is feasible from an engineering perspective.*
9. *The relative cost of travel by auto and travel by transit will not change significantly by the forecast year of 2020.*
10. *For the purposes of Screen 2, alternative investment strategies should not be constrained by capital dollars currently available.*

3.0 RECOMMENDATIONS FOR SCREEN 2 STRATEGIES

The transportation strategies recommended to be evaluated as part of Screen 2 are illustrated on Figures 2 through 14 and discussed below.

STRATEGY	ELEMENTS
Strategy #1 General Purpose Lanes and HOV	<ul style="list-style-type: none"> • Improvements to I-66, Rt. 29 and Rt. 50 • Reversible, barrier-separated HOV on I-66 • HOV extension on Rt. 29
Strategy #2 General Purpose Lanes and Light Rail	<ul style="list-style-type: none"> • Improvements to I-66 (only) • Light rail to Rt. 28/50 and Manassas
Strategy #3 General Purpose Lanes and Metrorail	<ul style="list-style-type: none"> • Improvements to I-66, Rt. 29 and Rt. 50 • Metrorail extension to Gainesville
Strategy #4 HOV and Light Rail	<ul style="list-style-type: none"> • Reversible, barrier-separated HOV on I-66 • HOV extension on Rt. 29 • Light rail to Rt. 28/50 and Manassas
Strategy #5 HOV and Metrorail	<ul style="list-style-type: none"> • Reversible, barrier-separated HOV on I-66 • HOV extension on Rt. 29 • Metrorail extension to Centreville
Strategy #6 Light Rail and Metrorail	<ul style="list-style-type: none"> • Light rail to Rt. 28/50 and Manassas Airport with connection at Centreville • Metrorail extension to Centreville
Strategy #7 General Purpose Lanes, HOV and Light Rail	<ul style="list-style-type: none"> • Improvements to I-66 (only) • Reversible, barrier-separated HOV on I-66 • HOV extension on Rt. 29 • Light rail to Rt. 28/50 and Manassas
Strategy #8 General Purpose Lanes, HOV and Metrorail	<ul style="list-style-type: none"> • Improvements to I-66, Rt. 29 and Rt. 50 • Reversible, barrier-separated HOV on I-66 • HOV extension on Rt. 29 • Metrorail extension to Centreville
Strategy #9 General Purpose Lanes, Light Rail and Metrorail	<ul style="list-style-type: none"> • Improvements to I-66, Rt. 29 and Rt. 50 • Light rail to Rt. 28/50 and Manassas Airport with connection at Centreville • Metrorail extension to Centreville

Strategy #10 HOV, Light Rail and Metrorail	<ul style="list-style-type: none"> • Reversible, barrier-separated HOV on I-66 • HOV extension on Rt. 29 • Light rail to Rt. 28/50 and Manassas Airport with connection at Centreville • Metrorail extension to Centreville
Strategy #11 I-66 Express/Local	<ul style="list-style-type: none"> • Widen I-66 to six lanes in each direction • Widen I-495 to six lanes in each direction
Strategy #12 "Super Bus"	<p>This strategy would consist of significant bus system improvements that include expanding existing service, providing new service between various origins and destinations, reducing bus headways, and increasing the frequency of service on Metrorail to Vienna. This strategy is intended to represent a more flexible transit improvement that could better serve the travel patterns in the corridor.</p>
Strategy #13 County Highway Plan	<p>This strategy would include selected roadway improvements that are part of the County Comprehensive Plans but are not in the CLRP. The improvements to be included in the strategy will be defined in consultation with county staff. Preliminary recommendations for inclusion in this strategy include the following roadways:</p> <ul style="list-style-type: none"> • Proposed Tri-County Parkway • Proposed Stone/Braddock Road Connector • Proposed Rt. 234 Bypass north of I-66 • Widening Rt. 236 to six lanes
Strategy #14 Generic Rail to Gainesville	<p>This strategy would put a fixed rail system in the median of I-66 between the Vienna Metrorail station and Gainesville. The rail system may be directly compatible with Metrorail or may be a different technology requiring a transfer at Vienna.</p>
Strategy #15 Virginia Railway Express (VRE)	<p>This strategy would extend VRE service to Haymarket. This element could be combined with any of the strategies defined above.</p>

Strategy #1 General Purpose Lanes and HOV

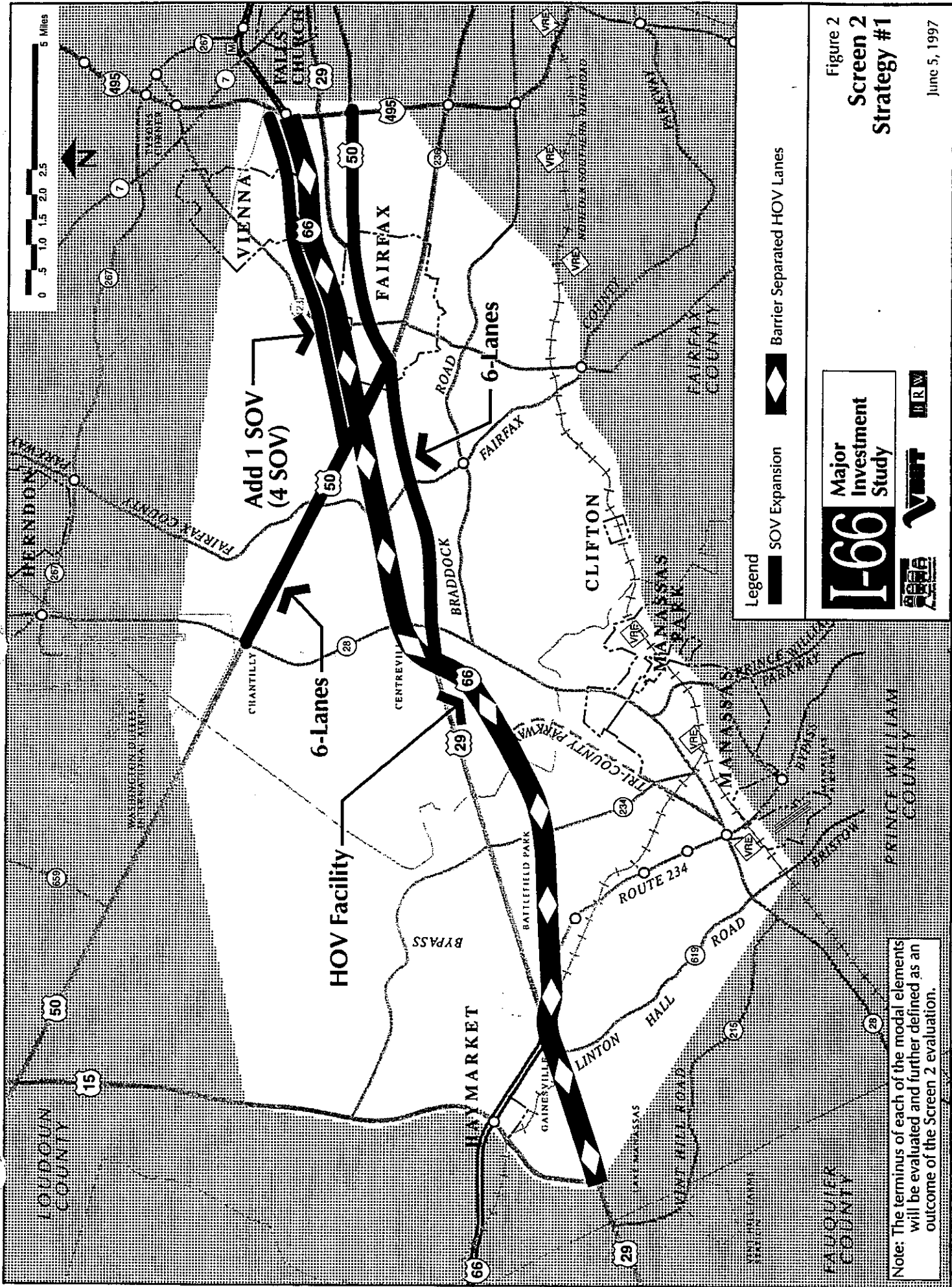
- Improvements to I-66, Rt. 29 and Rt. 50
- Reversible, barrier-separated HOV on I-66
- HOV extension on Rt. 29

This strategy is primarily highway oriented. It responds to the Screen 1B finding that the HOV demand in the corridor would warrant barrier-separated HOV lanes.

Improvements to I-66 would include construction of two reversible, barrier-separated HOV lanes and adding a general purpose lane in each direction. The HOV improvements would extend from I-495 west to Gainesville. The general purpose lane improvements would extend from I-495 to Route 50. The HOV lanes would operate one-way eastbound in the morning and one-way westbound in the afternoon.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Route 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 would be widened to six- or eight-lane arterials. These roads would be configured as 'super-arterials' with grade separations at most cross street intersections.



Strategy #2 General Purpose Lanes and Light Rail

- Improvements to I-66 (only)
- Light Rail to Rt. 28/50 and Manassas

This strategy would combine additional general purpose lanes on I-66 with light rail service focused on the existing Metrorail terminus at Vienna.

I-66 would be widened to include an additional general purpose lane in each direction between I-495 and Route 50.

Light rail service would consist of two lines: one connecting the Manassas area to the Vienna Metrorail station, and one connecting the Dulles Airport area to the Vienna Metrorail station.

Strategy #3 General Purpose Lanes and Metrorail

- Improvements to I-66, Rt. 29 and Rt. 50
- Metrorail extension to Gainesville

The improvements to I-66 would add one additional general purpose lane in each direction between I-495 and Route 50.

Route 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 would be widened to six- or eight-lane arterials. These roads would be configured as 'super-arterials' with grade separations at most cross street intersections.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Gainesville with a number of intermediate station sites.

Strategy #4 HOV and Light Rail

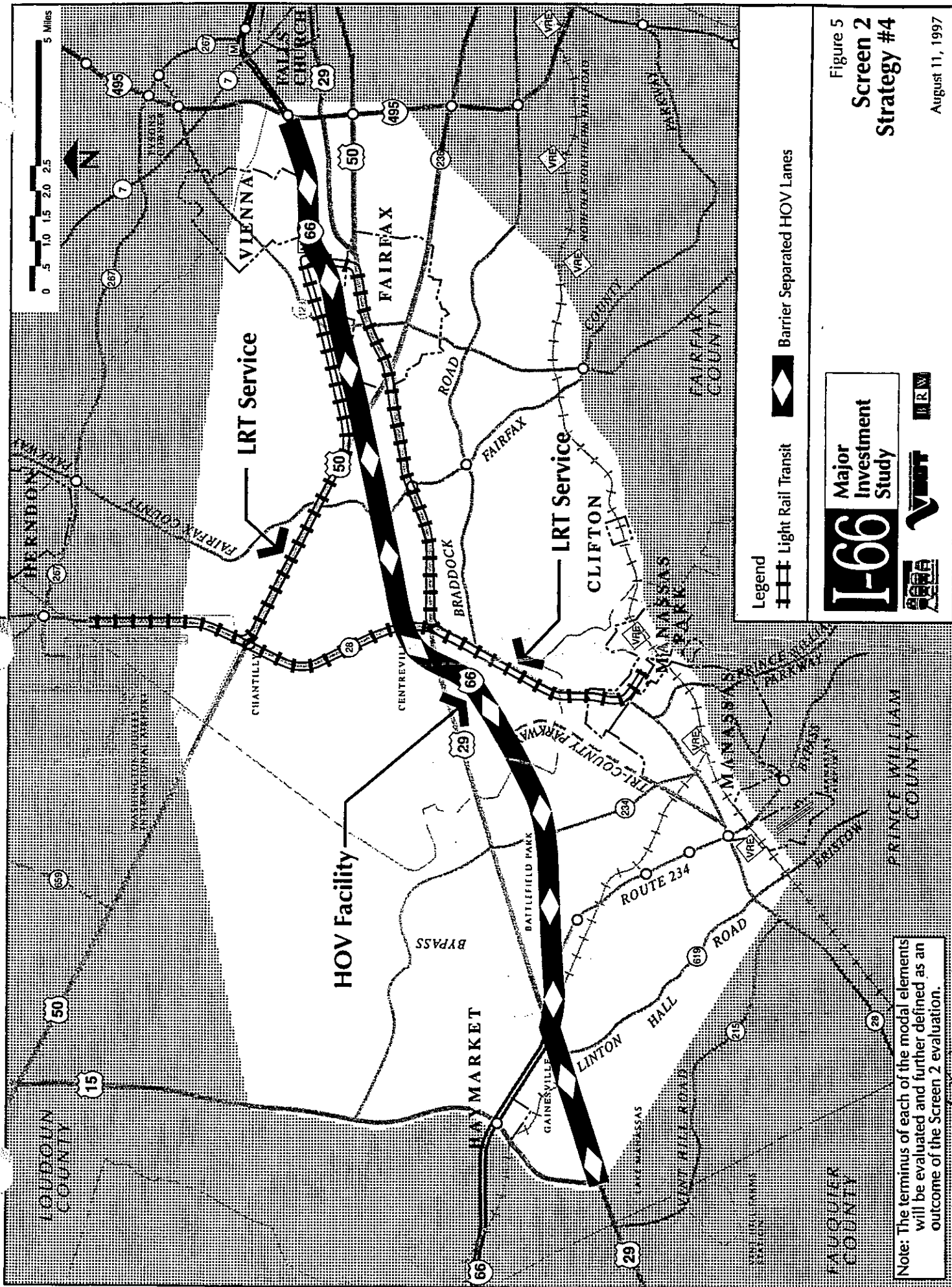
- Reversible, barrier-separated HOV on I-66
- HOV extension on Rt. 29
- Light rail to Rt. 28/50 and Manassas

This strategy combines reversible, barrier-separated HOV lanes on I-66 with light rail lines to Route 28/50 and Manassas serving the existing Metrorail terminus at Vienna.

Improvements to I-66 would include construction of two reversible, barrier-separated HOV lanes. The HOV improvements would extend from I-495 west to Gainesville.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Light rail service would consist of two lines: one connecting the Manassas area to the Vienna Metrorail station, and one connecting the Dulles Airport area to the Vienna Metrorail station.



Strategy #5 HOV and Metrorail

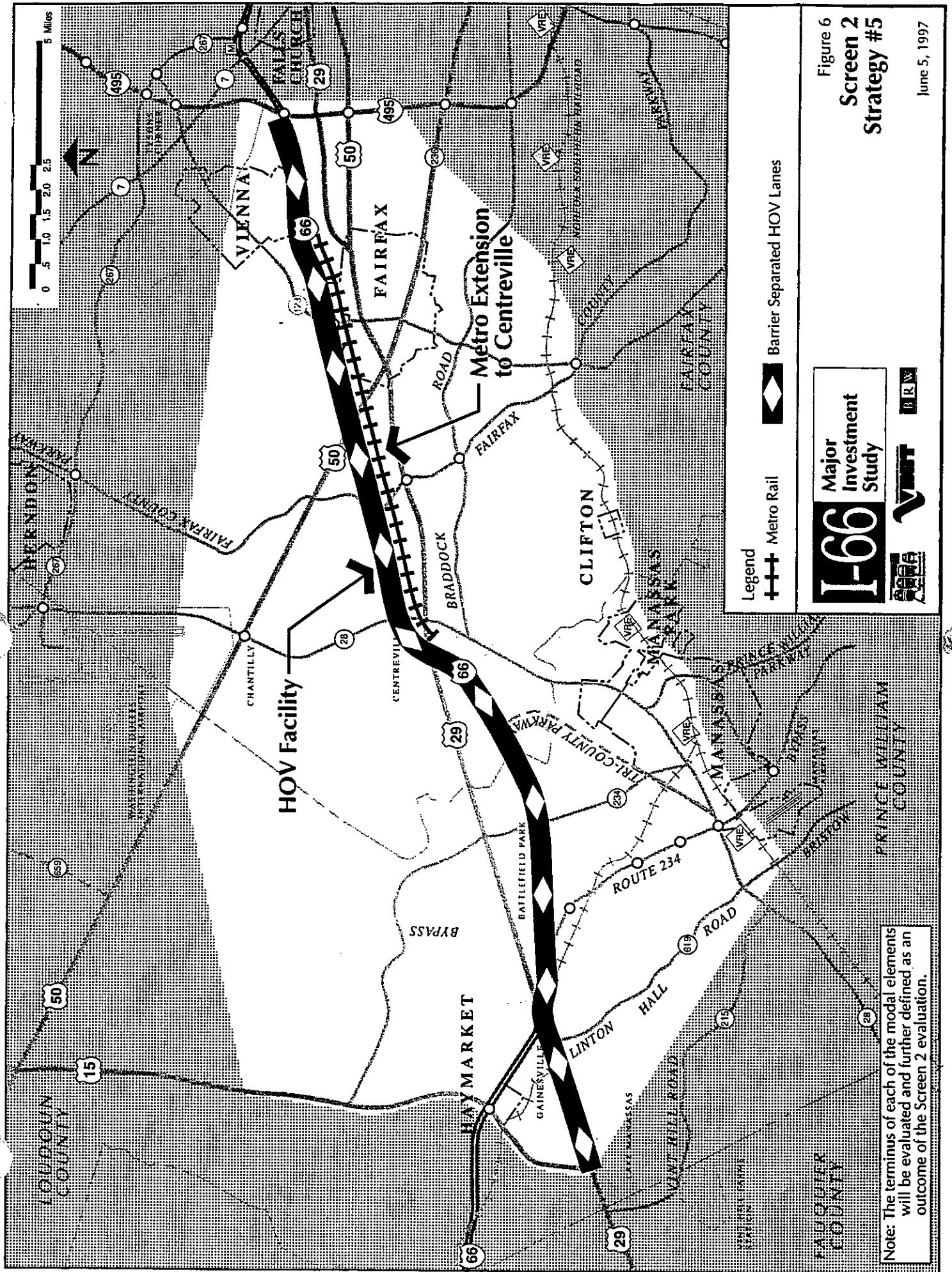
- Reversible, barrier-separated HOV on I-66
- HOV extension on Rt. 29
- Metrorail extension to Centreville

This strategy combines reversible, barrier-separated HOV on I-66 with an extension of the existing Metrorail system to Centreville.

Improvements to I-66 would include construction of two reversible, barrier-separated HOV lanes. The HOV improvements would extend from I-495 west to Gainesville.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.



Strategy #6 Light Rail and Metrorail

- Light rail to Rt. 28/50 and Manassas Airport with connection at Centreville
- Metrorail extension to Centreville

This strategy tests the effectiveness of extending Metrorail to Centreville with a light rail connection to the north and south from the Metrorail terminal station.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.

There would be two light rail lines focused on the Centreville Metrorail station. The southern light rail line would follow the Route 28 Bypass south to the vicinity of Manassas Airport. The northern light rail line would follow Stone Road to Route 28 to the vicinity of Dulles Airport.

Strategy #7 General Purpose Lanes, HOV and Light Rail

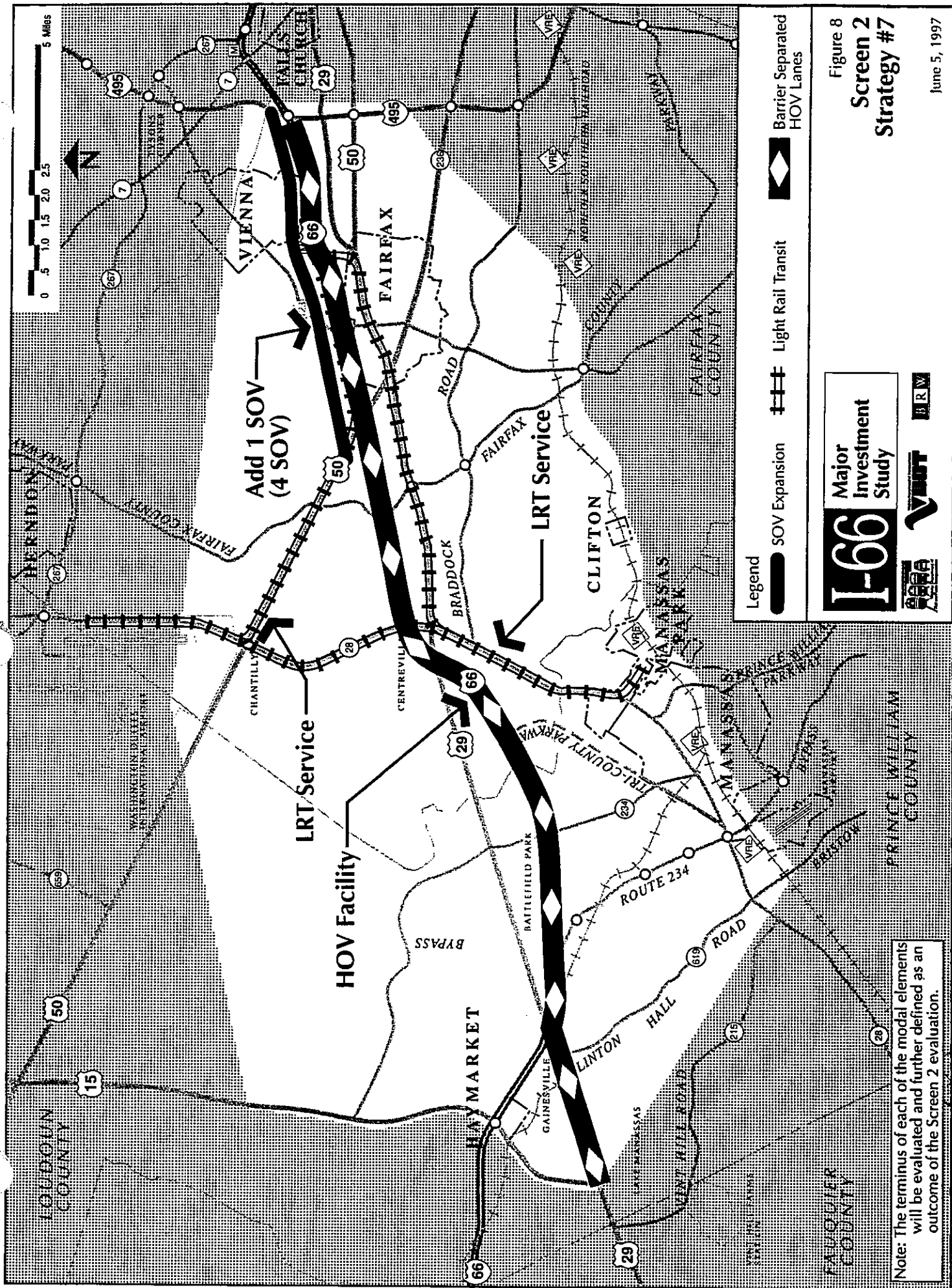
- Improvements to I-66 (only)
- Reversible, barrier-separated HOV on I-66
- HOV extension on Rt. 29
- Light rail to Rt. 28/50 and Manassas

This strategy would combine additional general purpose lanes on I-66 with reversible, barrier-separated HOV and light rail lines to Route 28/50 and Manassas serving the existing Metrorail terminus at Vienna. This strategy would not include additional general purpose lanes on Route 29 or Route 50.

Improvements to I-66 would include construction of two reversible, barrier-separated HOV lanes and adding a general purpose lane in each direction. The HOV improvements would extend from I-495 west to Gainesville. The general purpose lanes would extend from I-495 to Route 50. The HOV lanes would operate one-way eastbound in the morning and one-way westbound in the afternoon.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Light rail service would consist of two lines: one connecting the Manassas area to the Vienna Metrorail station, and one connecting the Dulles Airport area to the Vienna Metrorail station.



Strategy #8 General Purpose Lanes, HOV and Metrorail

- Improvements to I-66, Rt. 29 and Rt. 50
- Reversible, barrier-separated HOV on I-66
- HOV extension on Rt. 29
- Metrorail extension to Centreville

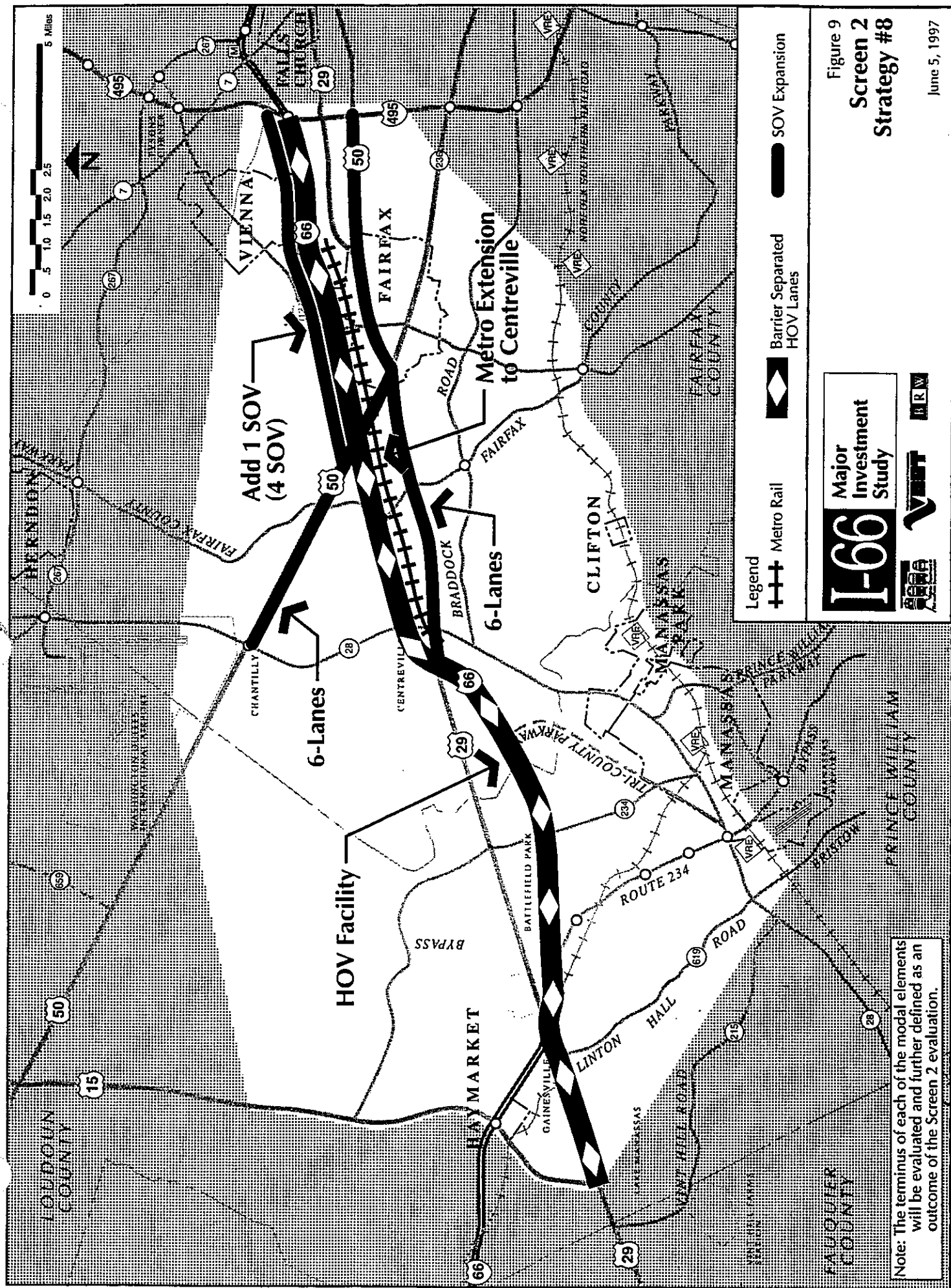
This strategy combines additional general purpose lanes on I-66, Route 29 and Route 50; reversible, barrier-separated HOV; and extension of the existing Metrorail system to Centreville.

Improvements to I-66 would include construction of two reversible, barrier-separated HOV lanes and adding a general purpose lane in each direction. The HOV improvements would extend from I-495 west to Gainesville. The additional general purpose lanes would extend from I-495 to Route 50. The HOV lanes would operate one-way eastbound in the morning and one-way westbound in the afternoon.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Route 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 would be widened to six- or eight-lane arterials. These roads would be configured as 'super-arterials' with grade separations at most cross street intersections.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.



Strategy #9 General Purpose Lanes, Light Rail and Metrorail

- Improvements to I-66, Rt. 29 and Rt. 50
- Light rail to Rt. 28/50 and Manassas Airport with connection at Centreville
- Metrorail extension to Centreville

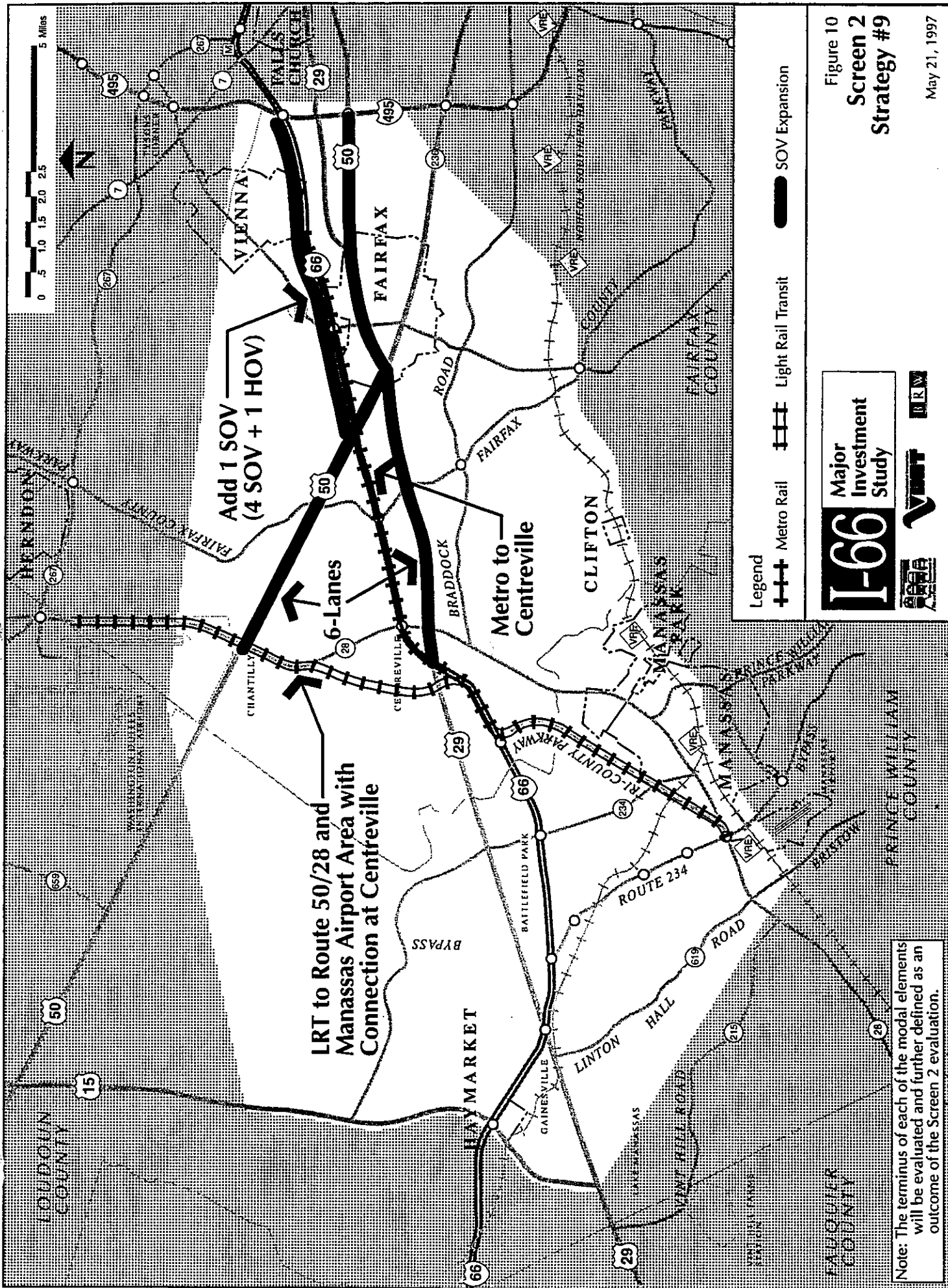
This strategy combines additional general purpose on I-66, Route 50 and Route 29 with light rail service focused on an extended Metrorail terminus station at Centreville.

The improvements to I-66 would add one additional general purpose lane in each direction between I-495 and Route 50.

Route 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 would be widened to six- or eight-lane arterials. These roads would be configured as 'super-arterials' with grade separations at most cross street intersections.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.

There would be two light rail lines focused on the Centreville Metrorail station. The southern light rail line would follow the Route 28 Bypass south to the vicinity of Manassas Airport. The northern light rail line would follow Stone Road to Route 28 to the vicinity of Dulles Airport.



Strategy #10 HOV, Light Rail and Metrorail

- Reversible, barrier-separated HOV on I-66
- HOV extension on Rt. 29
- Light rail to Rt. 28/50 and Manassas Airport with connection at Centreville
- Metrorail extension to Centreville

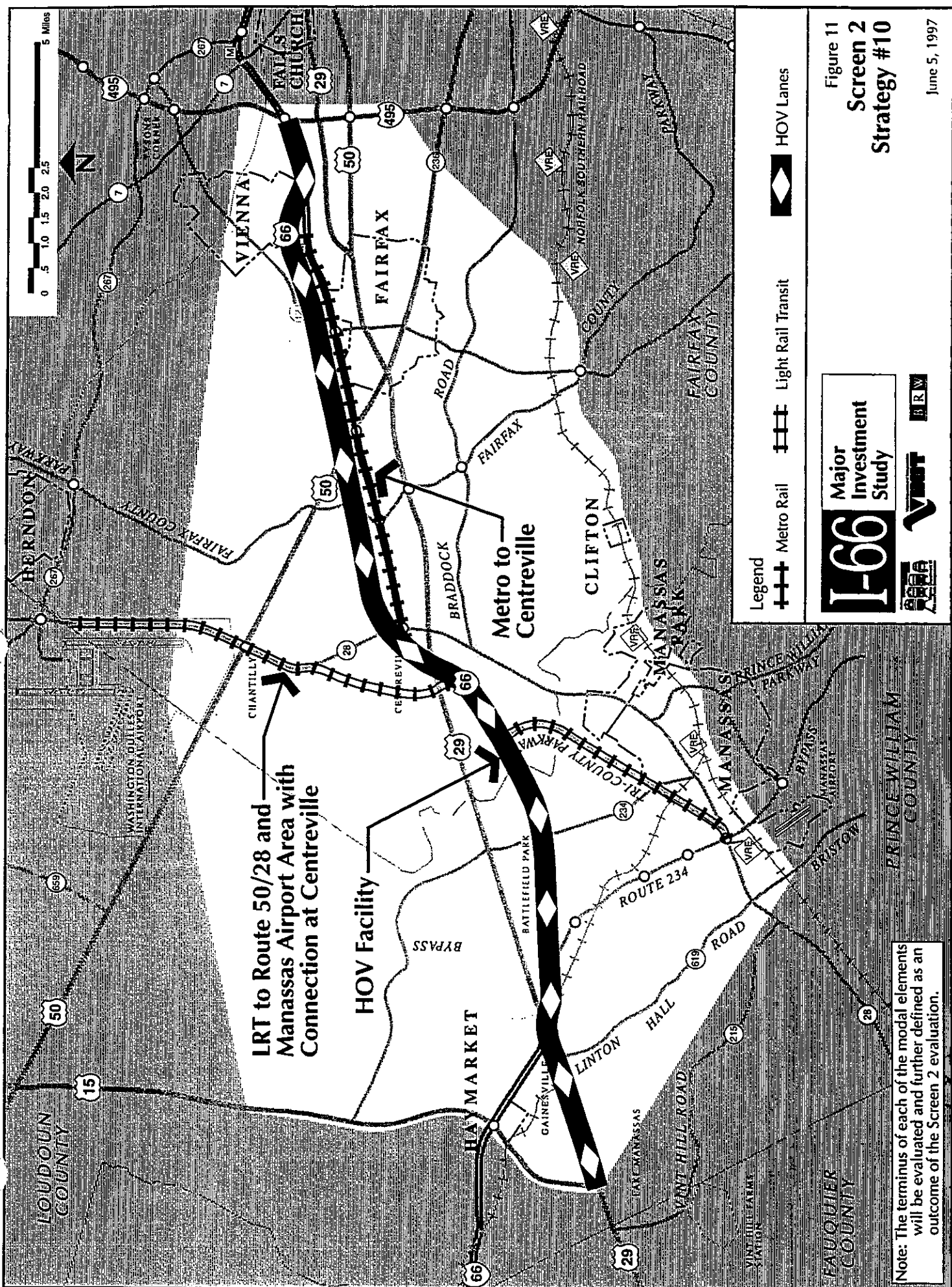
This strategy combines reversible, barrier-separated HOV with light rail lines to Route 28/50 and Manassas serving an extended Metrorail terminus station at Centreville.

Improvements to I-66 would include construction of two reversible, barrier-separated HOV lanes. The HOV improvements would extend from I-495 west to Gainesville. The HOV lanes would operate one-way eastbound in the morning and one-way westbound in the afternoon.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.

There would be two light rail lines focused on the Centreville Metrorail station. The southern light rail line would follow the Route 28 Bypass south to the vicinity of Manassas Airport. The northern light rail line would follow Stone Road to Route 28 to the vicinity of Dulles Airport.



Strategy #11 I-66 Express/Local

- Widen I-66 to six lanes in each direction
- Widen I-495 to six lanes in each direction

This strategy would widen I-66 to six lanes in each direction with an express/local configuration. This strategy would also assume that I-495 is widened to six lanes in each direction with an express/local configuration consistent with the Recommended Strategy Package in the Capital Beltway Study MIS Results Report (January 1997).

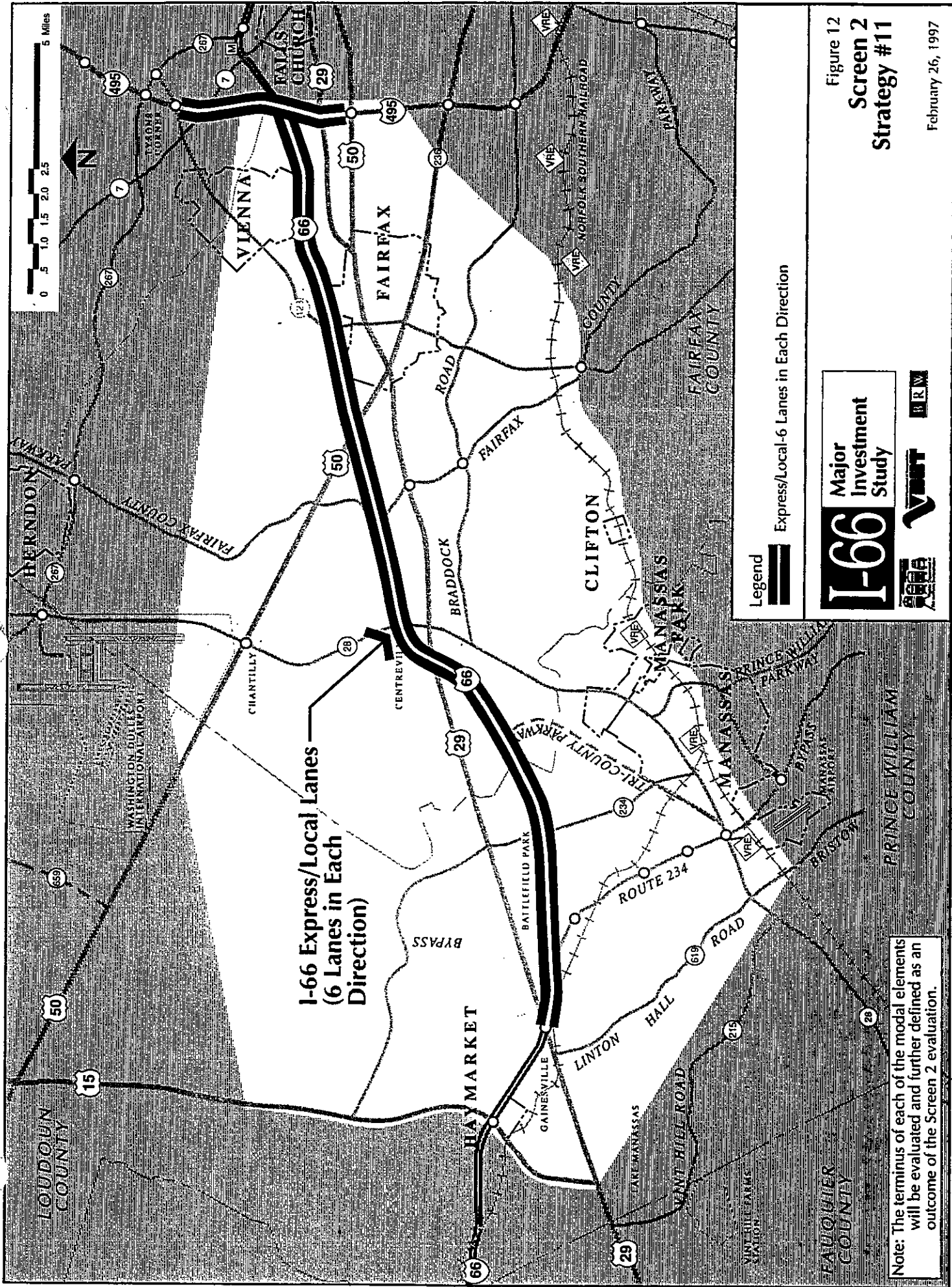


Figure 12
Screen 2
Strategy #11

February 26, 1997

I-66

Major Investment Study

BRW

Note: The terminus of each of the modal elements will be evaluated and further defined as an outcome of the Screen 2 evaluation.

Strategy #12 'Super Bus'

This strategy would consist of significant bus system improvements that include expanding existing service, providing new service between various origins and destinations, reducing bus headways and increasing the frequency of service on Metrorail to Vienna. This strategy is intended to represent a more flexible transit improvement that could better serve the travel patterns in the corridor.

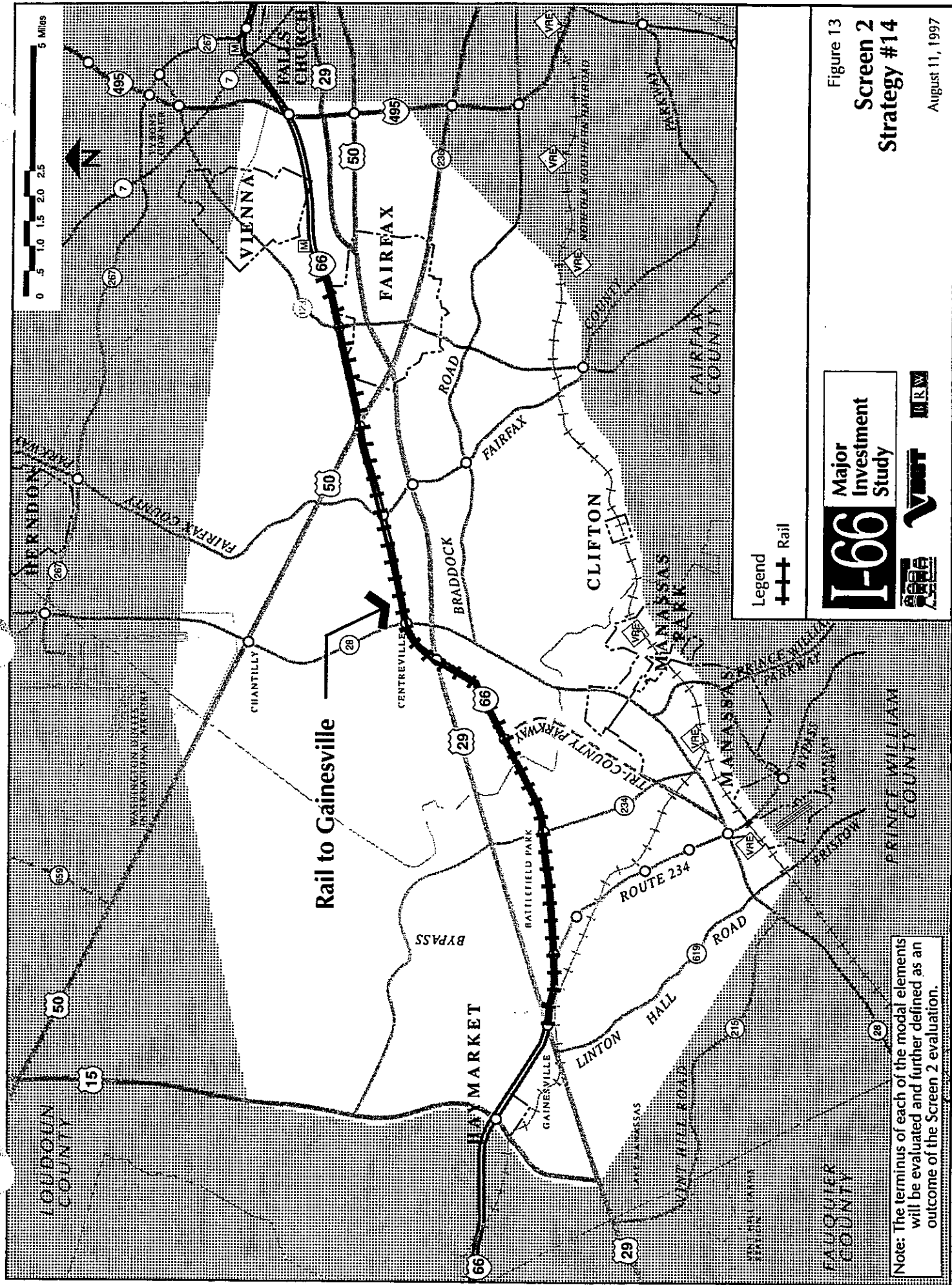
Strategy #13 County Highway Plan

This strategy would include selected roadway improvements that are part of the County Comprehensive Plans but are not in the CLRP. The improvements to be included in the strategy will be defined in consultation with county staff. Preliminary recommendations for inclusion in this strategy include the following roadways:

- Proposed Tri-County Parkway
- Proposed Stone/Braddock Road Connector
- Proposed Rt. 234 Bypass north of I-66
- Widening Rt. 236 to six lanes

Strategy #14 Generic Rail to Gainesville

This strategy would put a fixed rail system in the median of I-66 between the Vienna Metrorail station and Gainesville. The rail system may be directly compatible with Metrorail or may be a different technology requiring a transfer at Vienna.



Strategy #15 Virginia Railway Express

This strategy would extend VRE service to Haymarket. This element could be combined with any of the strategies defined above.

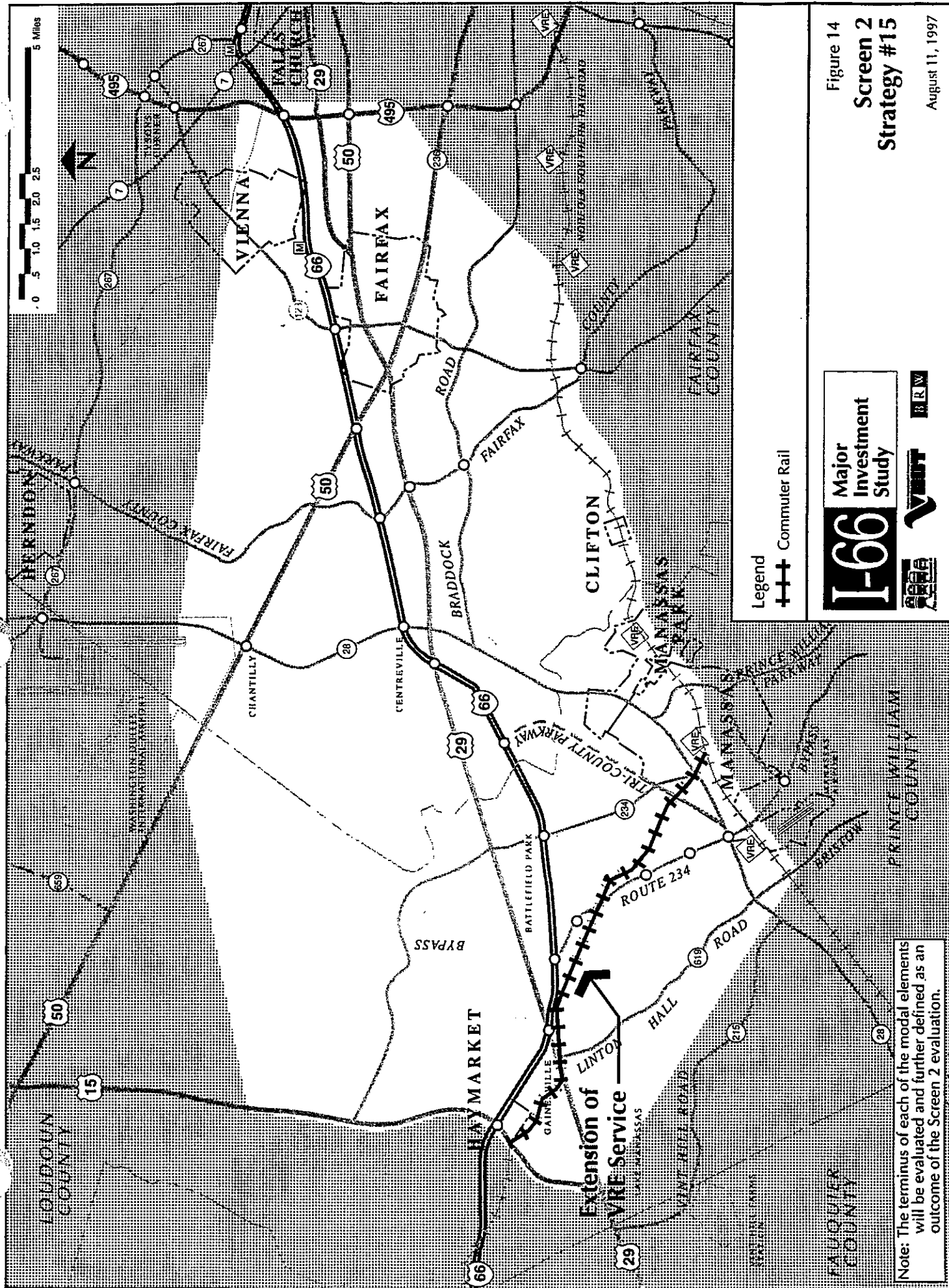


Figure 14
Screen 2
Strategy #15

I-66 Major Investment Study

VMT **BRW**

Legend
+ + + Commuter Rail

Note: The terminus of each of the modal elements will be evaluated and further defined as an outcome of the Screen 2 evaluation.

I-66 CORRIDOR MIS

1990 AND 2020 CORRIDOR TRAVEL PATTERNS

Prepared for:

**The Commonwealth of Virginia
Department of Rail and Public Transportation
and
Department of Transportation**

Prepared By:

**BRW, Inc.
And
KPMG Peat Marwick**

July 9, 1997

INTRODUCTION

The I-66 Corridor MIS Policy Advisory Committee (PAC) requested information regarding travel patterns in the I-66 corridor. These travel patterns are one of the keys to evaluating the potential strategies to move forward in the I-66 MIS study process. This memorandum presents initial travel modeling results. The Screen 2 multi-modal strategies will be reviewed by the study team to ensure that the strategies address the deficiencies identified in this memorandum. Travel forecasts for the multi-modal strategies being evaluated will be presented at a future date.

The 1990 and 2020 travel patterns are presented in terms of home based work trip productions and attractions. Home based work trips generally occur during peak periods and are the primary contributor to peak period traffic congestion. The length and regularity of home based work trips make them susceptible to transportation system changes than non-work trips.

A trip production is the home-based end of the work trip. A trip attraction is the workplace end of the work trip.

For purposes of this analysis, the I-66 corridor study area (Figure 1) has been broken into four areas as illustrated on Figure 2 and defined below:

- East Corridor - Extends from I-495 west to Route 50 and encompasses Vienna, Oakton, Fairfax City and portions of eastern Fairfax County. This represents the most highly developed portion of the corridor.
- Central Corridor - Extends from Route 50 west to the Fairfax County line and encompasses the rapidly growing areas of western Fairfax County including Fair Oaks, Centreville, and Chantilly.
- West Corridor - Extends from the eastern Prince William County line west to Route 15 and includes the Manassas area and a portion of southeastern Loudoun County.
- Outer Corridor - Extends from Route 15 west to the western Fauquier County line and encompasses western Prince William County, most of Fauquier County and a portion of southern Loudoun County.

THE MODEL

As part of the I-66 Corridor MIS travel analysis, the Northern Virginia Regional Travel Model was developed to forecast regional travel. The Northern Virginia Model is an enhanced version of the

Dulles Rail Corridor Travel Model incorporating an expanded regional cordon line, a refined travel analysis zone structure, and MWCOG Version 5.3 land use forecasts. The model has been calibrated and validated to 1990 conditions in Northern Virginia and used to forecast 2020 travel demand with the 1996 Constrained Long Range Plan (CLRP) transportation system.

CORRIDOR TRAVEL PATTERNS

Corridor travel patterns are illustrated and discussed on the attached graphics which depict:

- Figure 3 - Work Trip Corridor Origins and Destinations
- Figure 4 - Home Based Work Travel Patterns Originating and Destined to the corridor
- Figure 5 - Distribution of Work Trips Generated by Residents of the East Corridor
- Figure 6 - Distribution of Work Trips Generated by Residents of the Central Corridor
- Figure 7 - Distribution of Work Trips Generated by Residents of the West Corridor
- Figure 8 - Distribution of Work Trips Generated by Residents of the Outer Corridor
- Figure 9 - Residential Origins of Work Trips Destined for the East Corridor
- Figure 10 - Residential Origins of Work Trips Destined for the Central Corridor
- Figure 11 - Residential Origins of Work Trips Destined for the West Corridor
- Figure 12 - Residential Origins of Work Trips Destined for the Outer Corridor

SCREENLINE VOLUMES AND CAPACITIES

The previous graphics illustrate a substantial increase in corridor travel demand between 1990 and 2020. This increase in travel demand will be offset to some extent by planned and programmed transportation system improvements. This is illustrated in Figures 13 and 14 which show PM peak hour, peak direction traffic volumes and estimated roadway capacities at various screen line locations in the I-66 corridor study area. The screenline volumes represent the total traffic volumes that would cross the screenline and the capacities represent the capacity of the roadways crossing the screenlines.

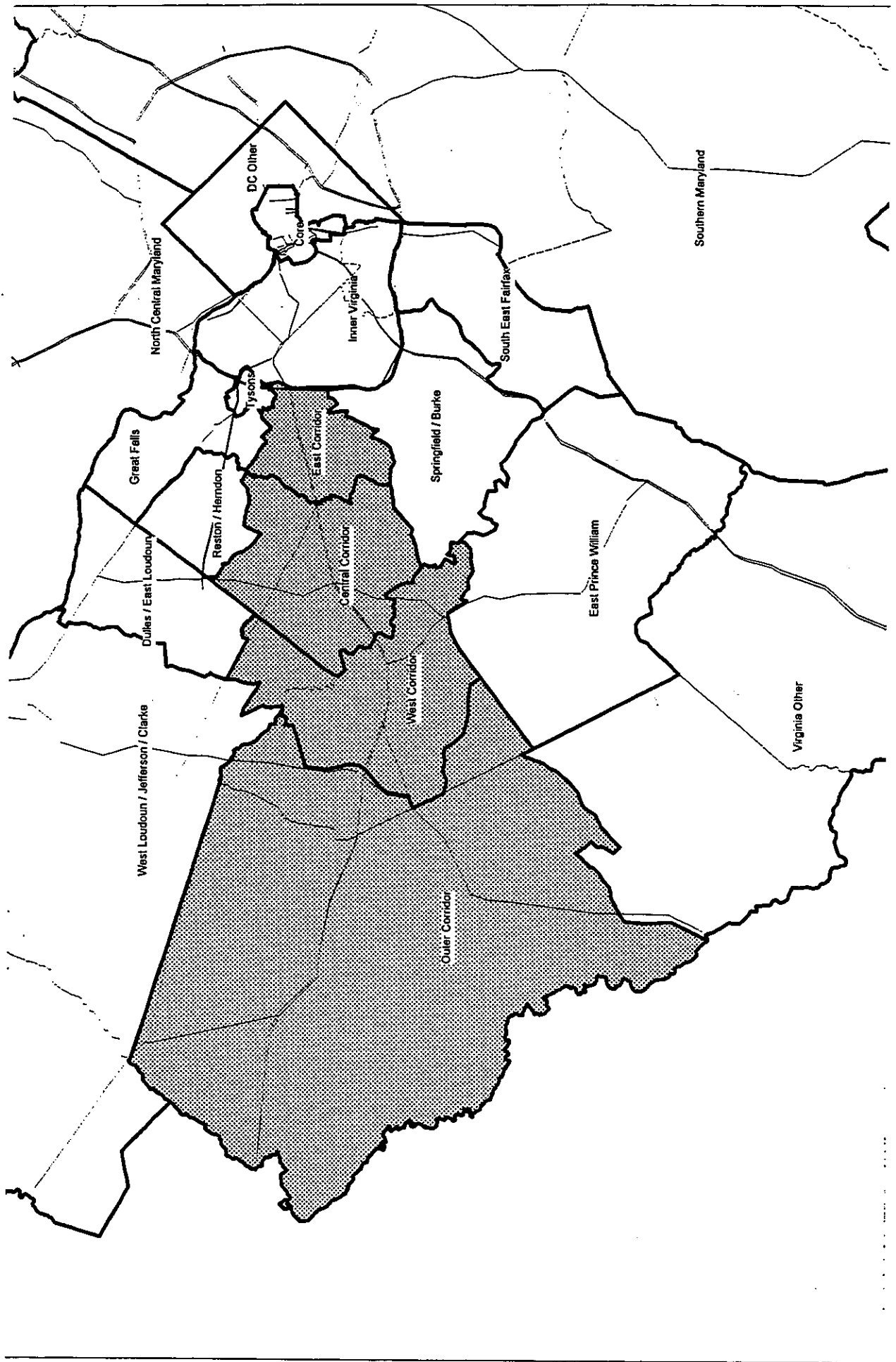


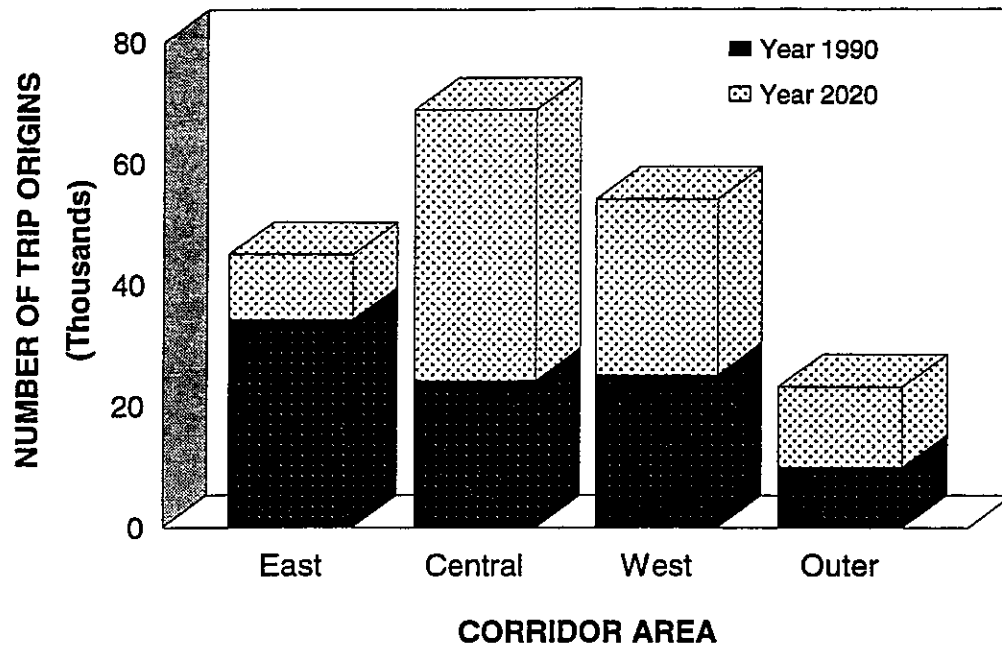
FIGURE 2

CORRIDOR ORIGINS AND DESTINATIONS (FIGURE 3)

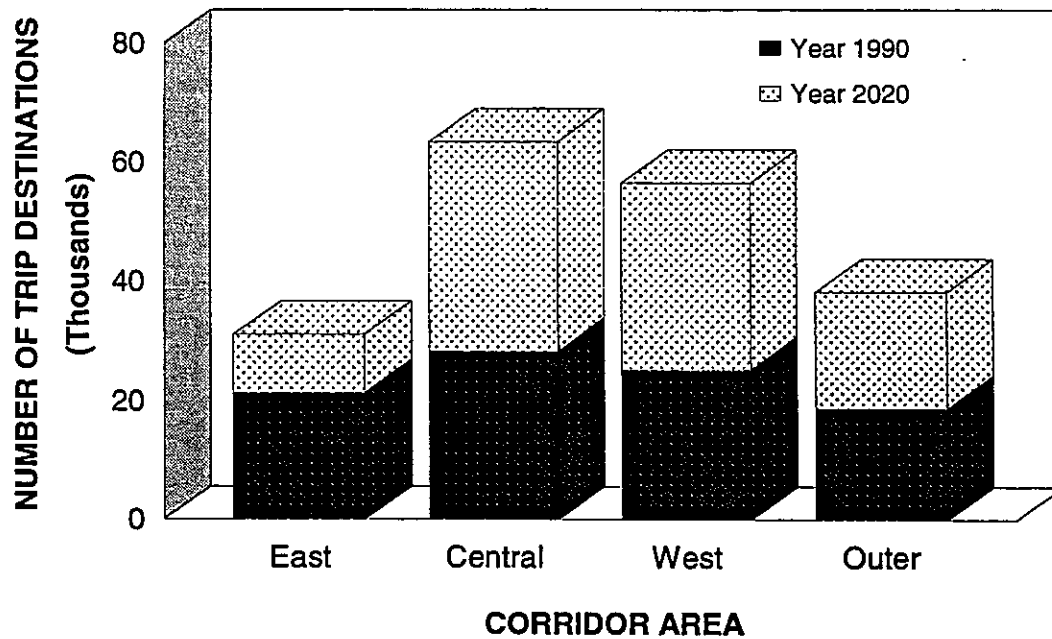
- The Central Corridor area will have the most significant growth between 1990 and 2020 and will generate the most trip origins and destinations.
- The East Corridor area will continue to grow but will grow substantially less than either the Central or Western Corridor areas.
- The number of trip origins and destinations in the Central, Western and Outer Corridor areas will more than double between 1990 and 2020.

I-66 CORRIDOR MIS

WORK TRIP ORIGINS IN CORRIDOR



WORK TRIP DESTINATIONS IN CORRIDOR



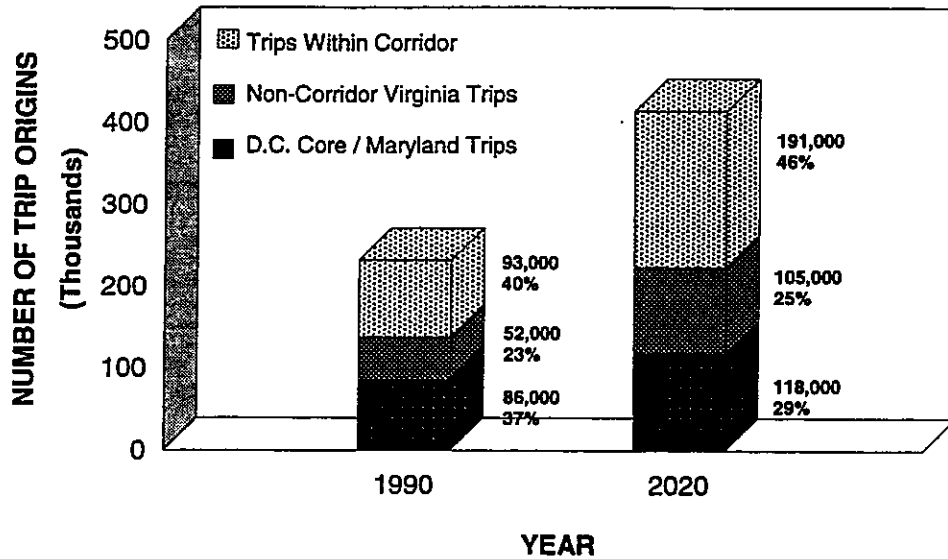
REGIONAL TRAVEL PATTERNS (FIGURE 4)

- While the conventional radial travel patterns of trips between the corridor and the core will continue to grow, radial travel will represent a smaller proportion of corridor travel in 2020 than it did in 1990.
- The number of trips that stay within the corridor will approximately double. The proportion of trips that stay in the corridor will increase .
- Non-corridor Virginia trips generally represent circumferential travel. The number of non-corridor Virginia trips will almost double from 1990 to 2020 but will remain approximately the same proportion of total travel.

I-66 CORRIDOR MIS

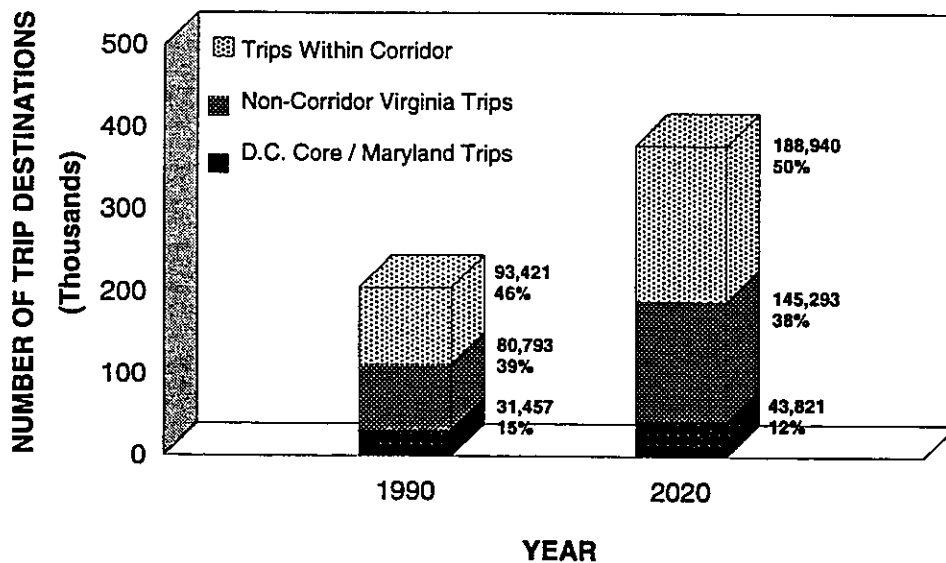
HOME BASED WORK TRAVEL PATTERNS

Trips Originating in the Corridor



HOME BASED WORK TRAVEL PATTERNS

Trips With Destinations in the Corridor



DISTRIBUTION OF WORK TRIPS GENERATED BY RESIDENTS OF THE EAST CORRIDOR (FIGURE 5)

- Work trips from the East Corridor show relatively little growth from 1990 to 2020.
- Attractions are approximately equally divided between the corridor itself, the DC and Arlington core, and other portions of Northern Virginia inside the Beltway.
- The most significant change in travel patterns is a significant increase in outbound travel to the Central Corridor. In 1990, travel to this area was less than a quarter of the amount of travel to the other major destinations, increasing to approximately half the size of the travel to these destinations by 2020.
- This increase has come largely at the expense of travel to the core, which has remained about equal in absolute terms and has decline in relative terms from a market share of 23 percent to a market share of only 18 percent.

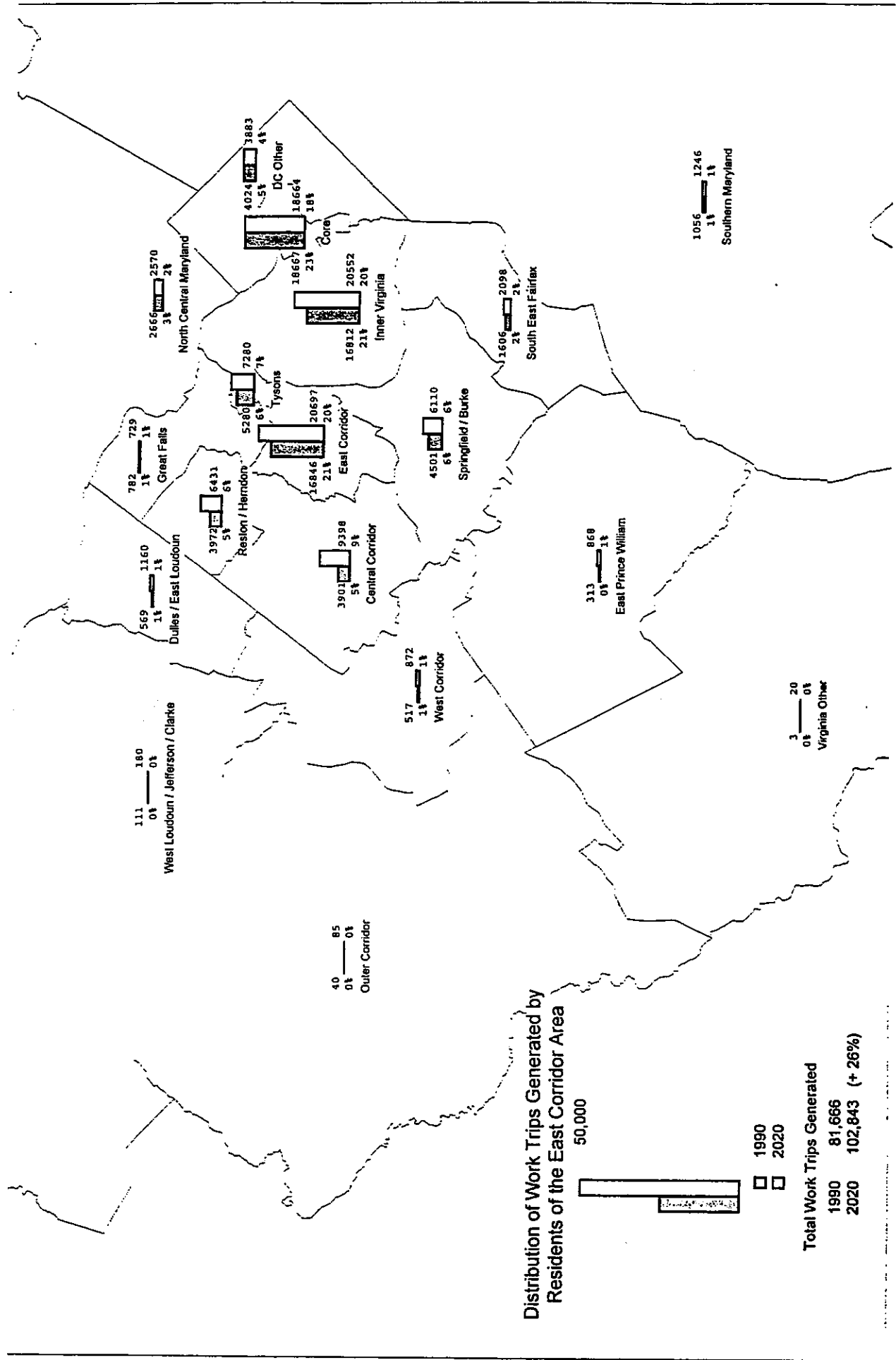


FIGURE 5

DISTRIBUTION OF WORK TRIPS GENERATED BY RESIDENTS OF THE CENTRAL CORRIDOR (FIGURE 6)

- Work trips from the central corridor almost double during the period from 1990 to 2020.
- Trips made to destinations within the corridor nearly triple in magnitude and rise from a market share of 19 percent to a market share of 29 percent.
- Trips to the East Corridor, the core, and inner Virginia all gain in absolute terms but lose significantly in market share.
- There is a significant increase in cross-country commuting to the Reston/Herndon area and to the Dulles/East Loudoun area. Both more than double in magnitude and the former is the only market other than internal travel to show a noticeable increase in market share.

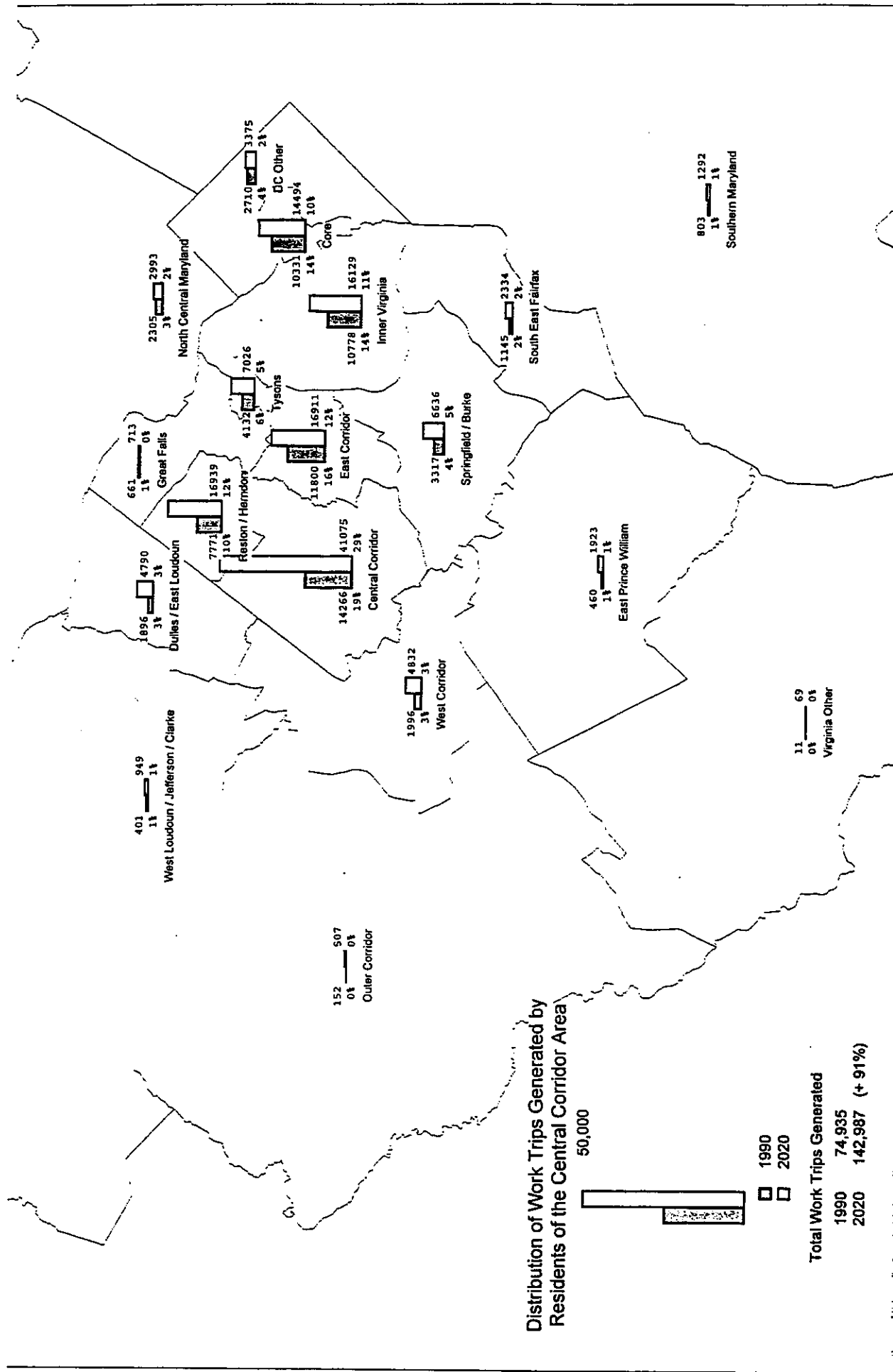


FIGURE 6

DISTRIBUTION OF WORK TRIPS GENERATED BY RESIDENTS OF THE WEST CORRIDOR (FIGURE 7)

- Work trips from the West Corridor show a somewhat similar pattern to those from the Central Corridor, although not as pronounced. Internal trips grow more significantly, but only manage to maintain market share.
- Trips to the Central Corridor increase in both magnitude and market shares, as do cross-country trips to the eastern part of Prince William County.
- Trips to the inner jurisdictions are much smaller than from the previous areas and show only very modest growth, with fairly significant decline in market share.

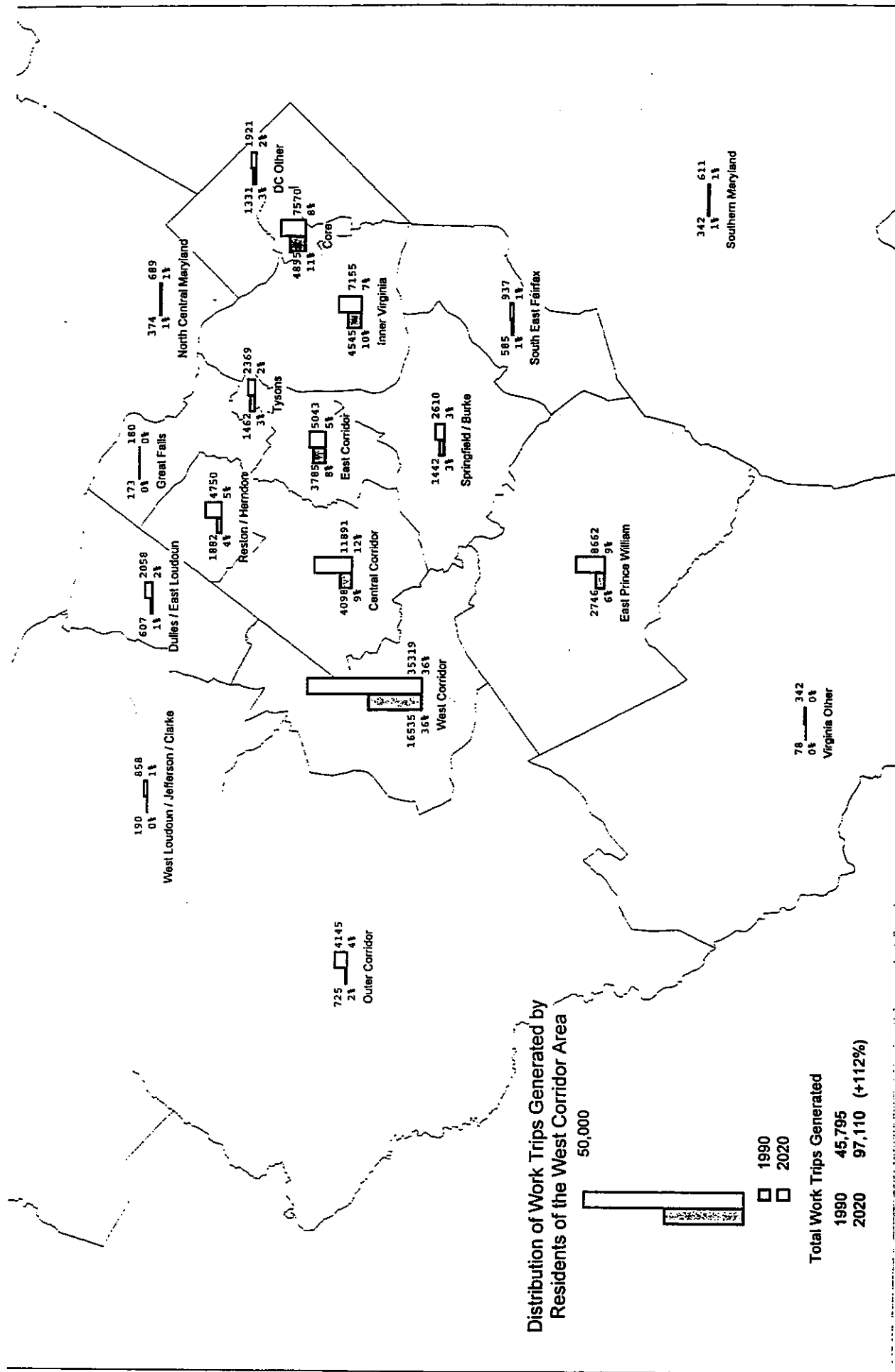


FIGURE 7

DISTRIBUTION OF WORK TRIPS GENERATED BY RESIDENTS OF THE OUTER CORRIDOR (FIGURE 8)

- Trips from the Outer Corridor are smaller in number than for the other areas, although they do almost double over the 1990-2020 period, similar to the Central Corridor but slightly less than the West Corridor.
- Internal trips remain the largest market and actually increase slightly in share, with the second largest market being the West Corridor, which also slightly increases in share.
- Trips to all other areas are much more modest than for the inner corridor areas and generally change only slightly with an overall decline in market share to most locations.

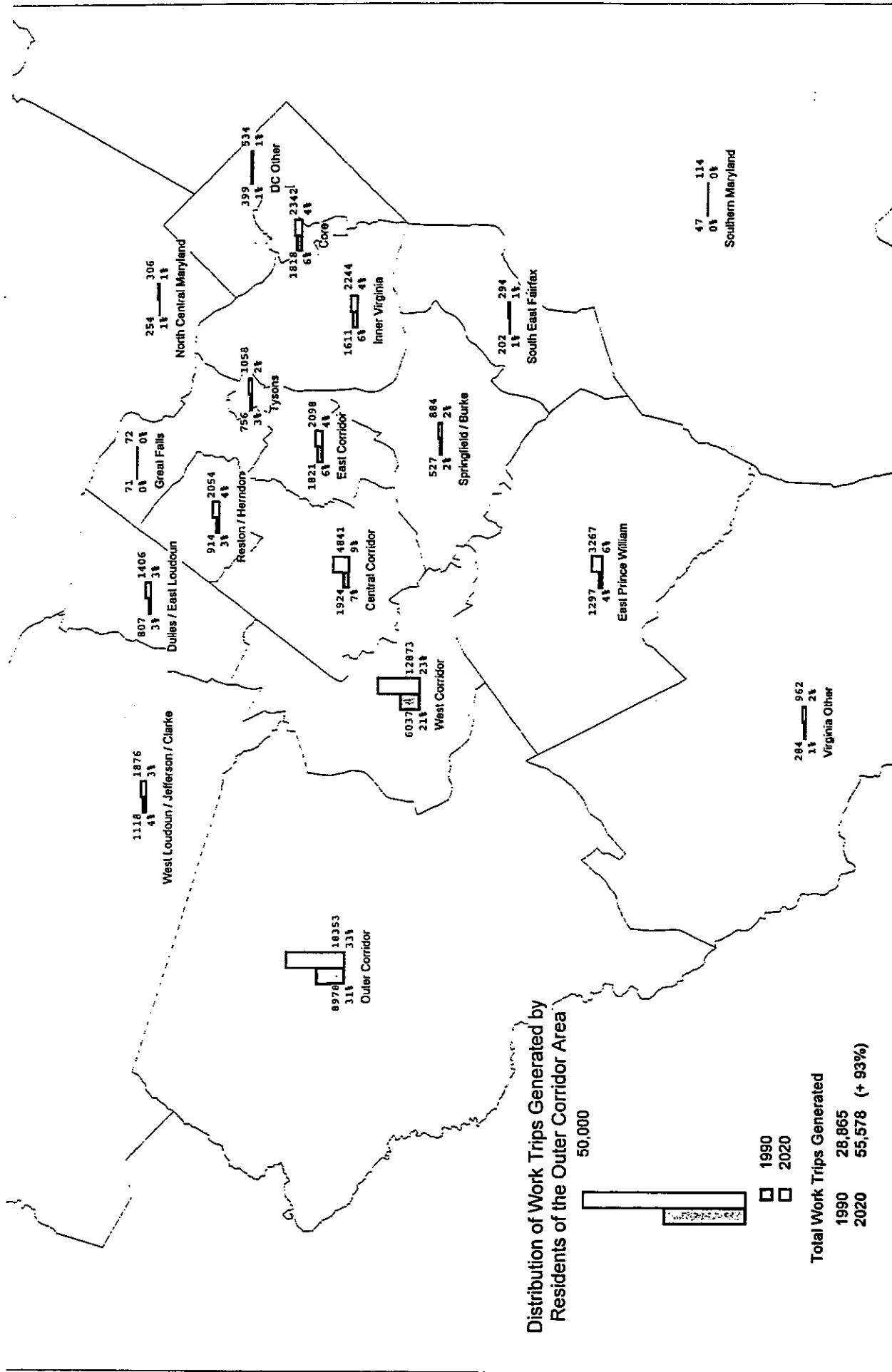


FIGURE 8

RESIDENTIAL ORIGINS OF WORK TRIPS DESTINED FOR THE EAST CORRIDOR (FIGURE 9)

- As in the case of trips generated by residents of the East Corridor, trips attracted to the East Corridor show a modest growth reflecting the largely built-out form of development in that area.
- The largest sources of trips into the East Corridor are divided more or less evenly between the corridor itself, portions of Northern Virginia inside the Beltway, the Springfield/Burke area, and the Central Corridor.
- Trips from the Central Corridor increase the most in absolute terms and also increase in market share.

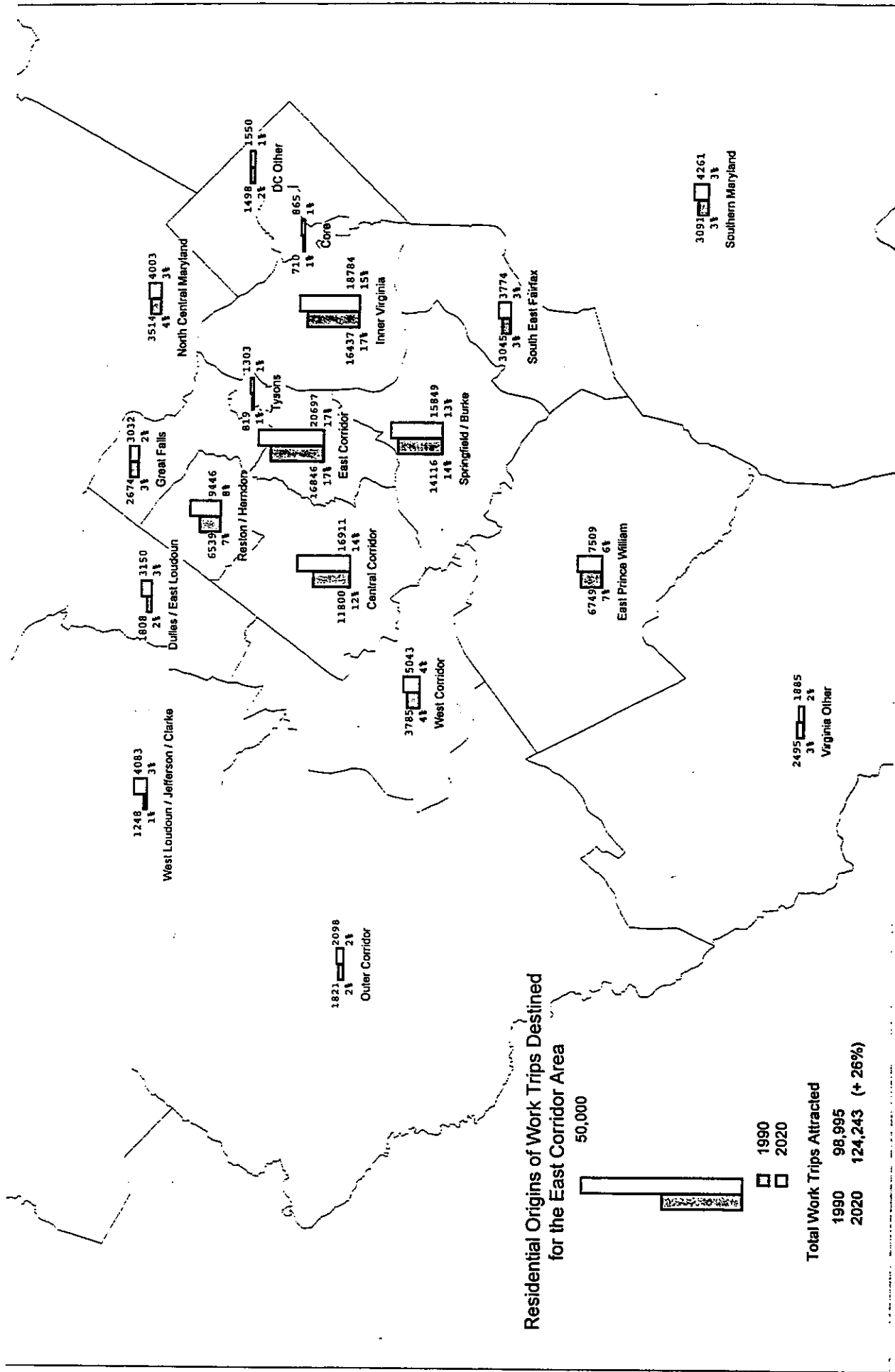


FIGURE 9

RESIDENTIAL ORIGINS OF WORK TRIPS DESTINED FOR THE CENTRAL CORRIDOR (FIGURE 10)

- Work trips attracted to the Central Corridor show very dramatic growth, almost tripling between 1990 and 2020.
- By far the largest growth and primary source is the corridor itself, although the overall market share does not change significantly.
- Other major growth occurs in cross-country movements from the Reston/Herndon area and from Loudoun County, although significant growth also occurs from the West Corridor and from eastern Prince William County.
- Reverse commuting from the inner Virginia area inside the Beltway or from across the Potomac remains a very small market and generally declines somewhat in market share.

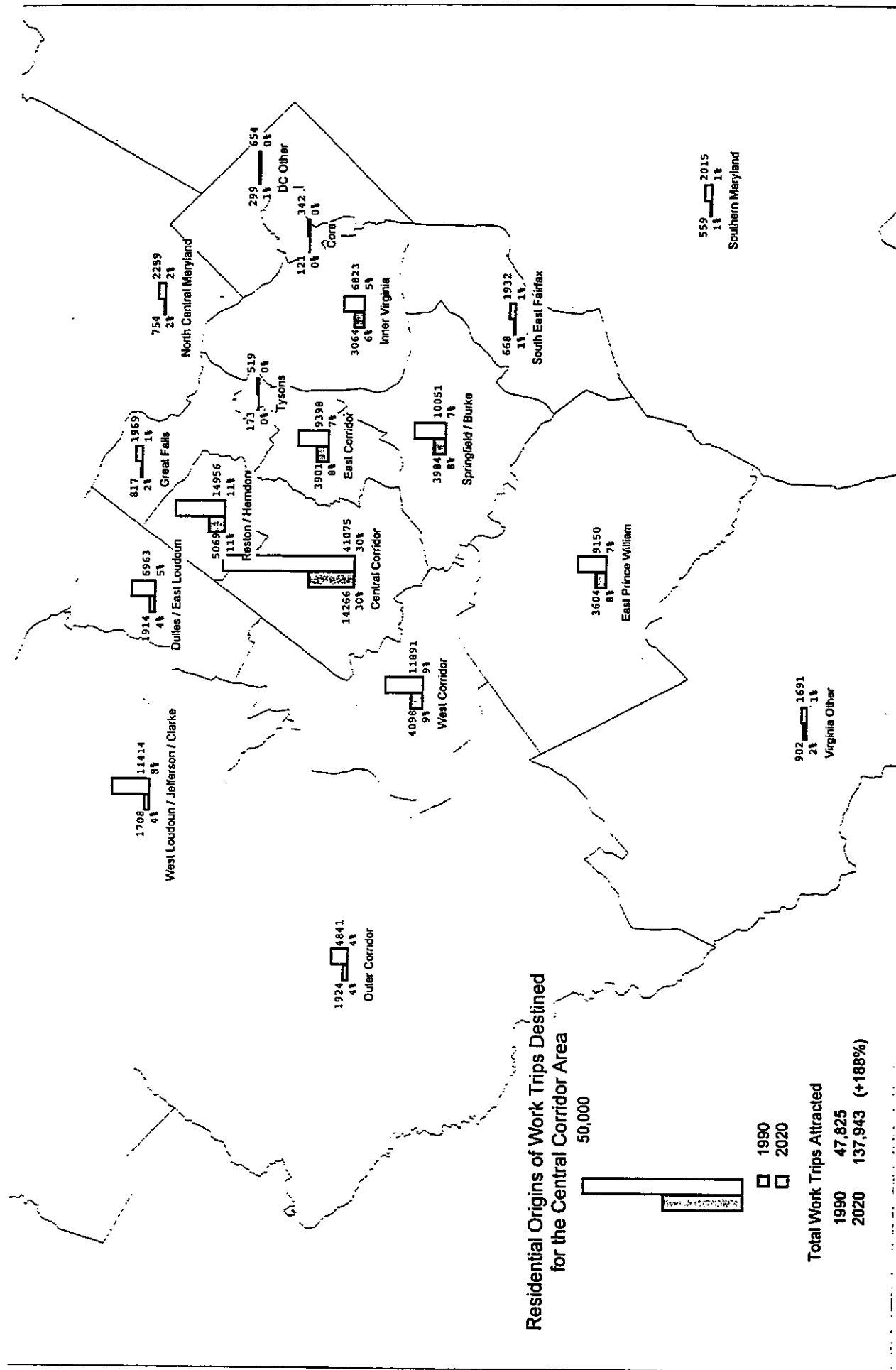


FIGURE 10

RESIDENTIAL ORIGINS OF WORK TRIPS DESTINED FOR THE WEST CORRIDOR (FIGURE 11)

- Trips attracted to the West Corridor are somewhat fewer in number with a somewhat lower growth rate, although they still nearly double in number.
- The largest market by far is internal trips within the West Corridor area which increases noticeably in market share.
- Trips from eastern Prince William County remain the second largest market but drop somewhat in market share.
- Reverse commute trips and outbound trips in general constitute a quite modest overall market.

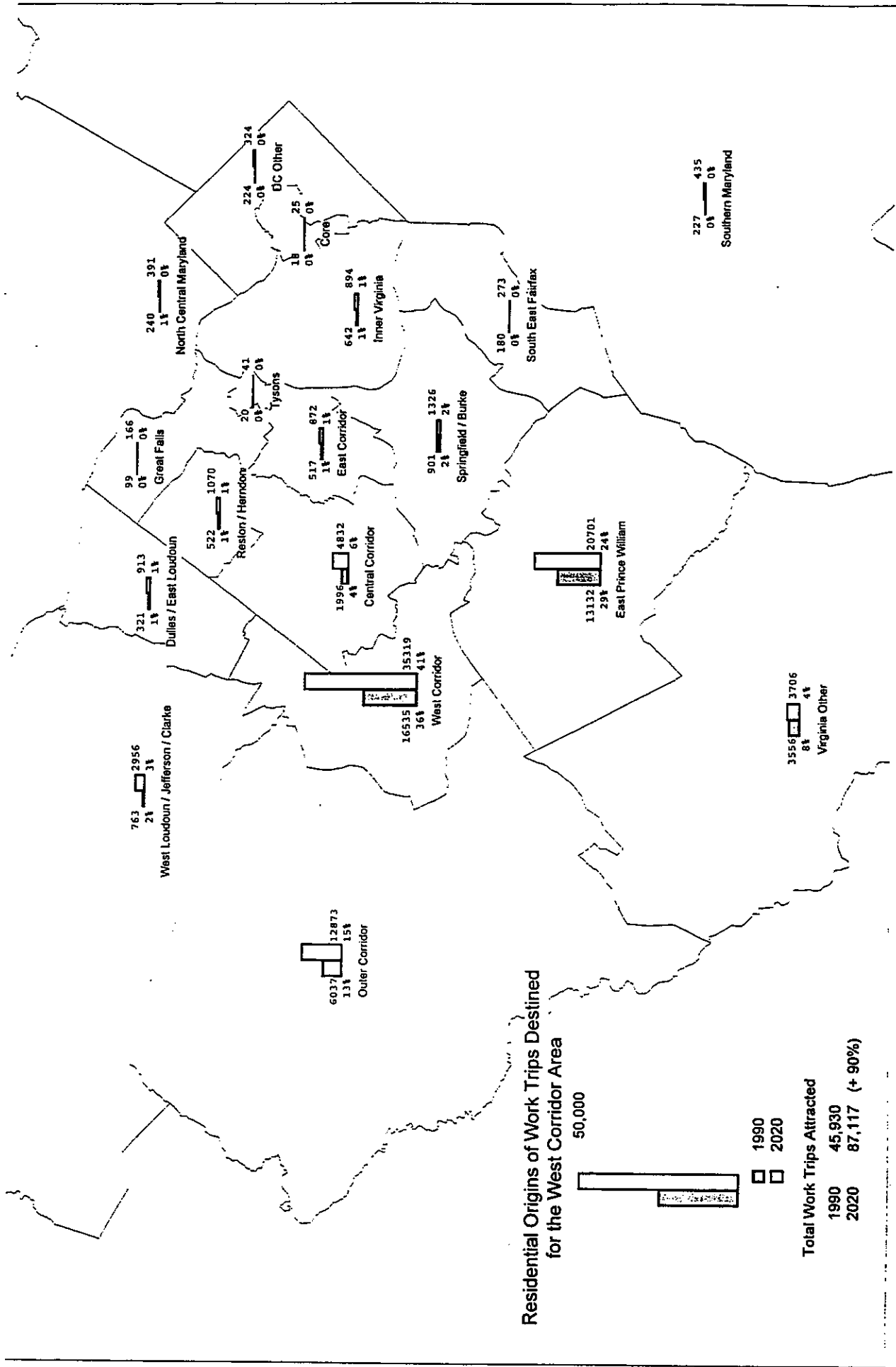


FIGURE 11

RESIDENTIAL ORIGINS OF WORK TRIPS DESTINED FOR THE OUTER CORRIDOR (FIGURE 12)

- Trips attracted to the outer corridor are quite small in number, reflecting the largely rural nature of this area, but are projected to more than double by 2020.
- Most of the trips remain within the corridor, although the market share drops slightly from an overwhelming 69 percent to 64 percent, with the primary increase being taken by the West Corridor.

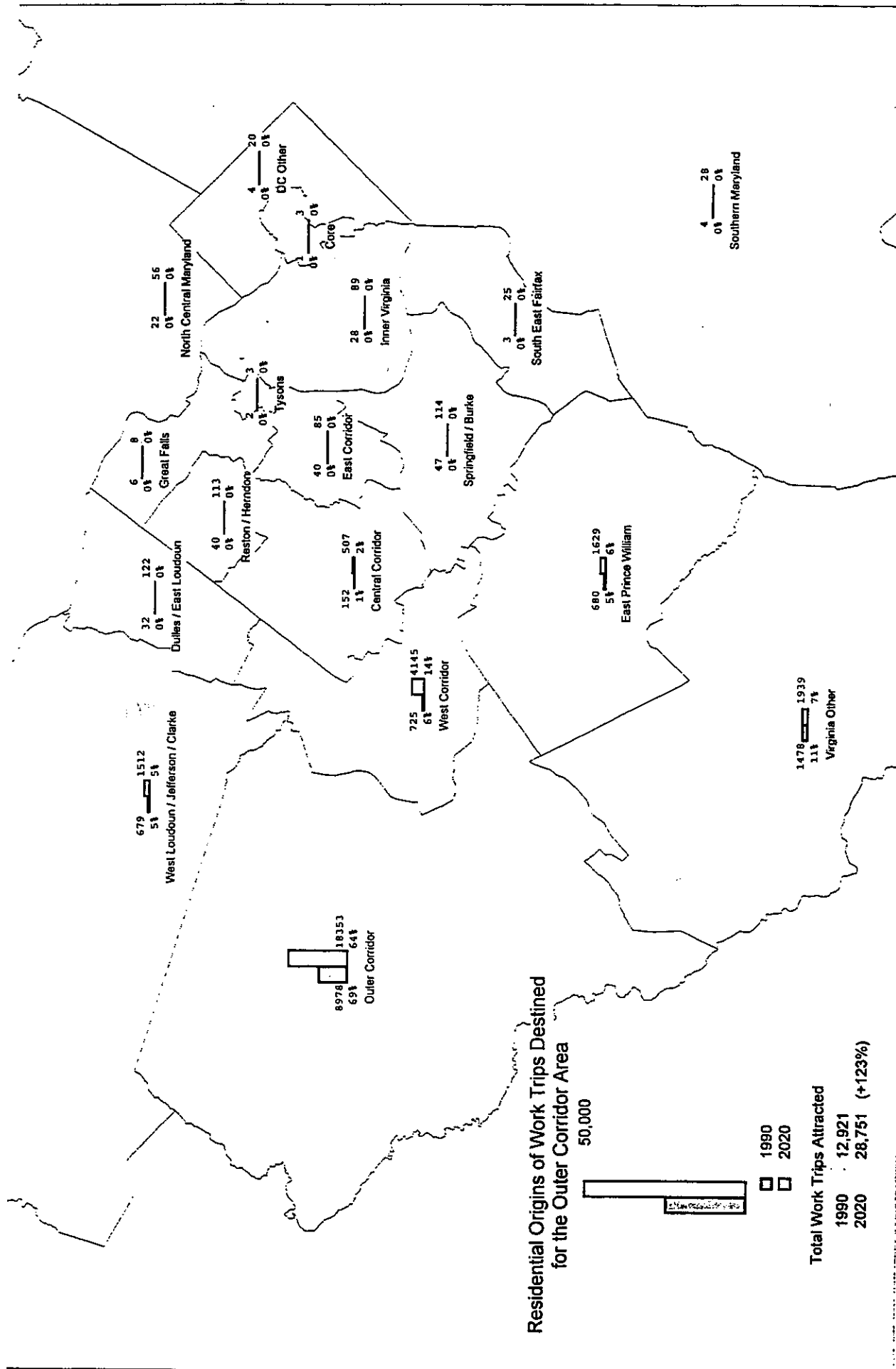
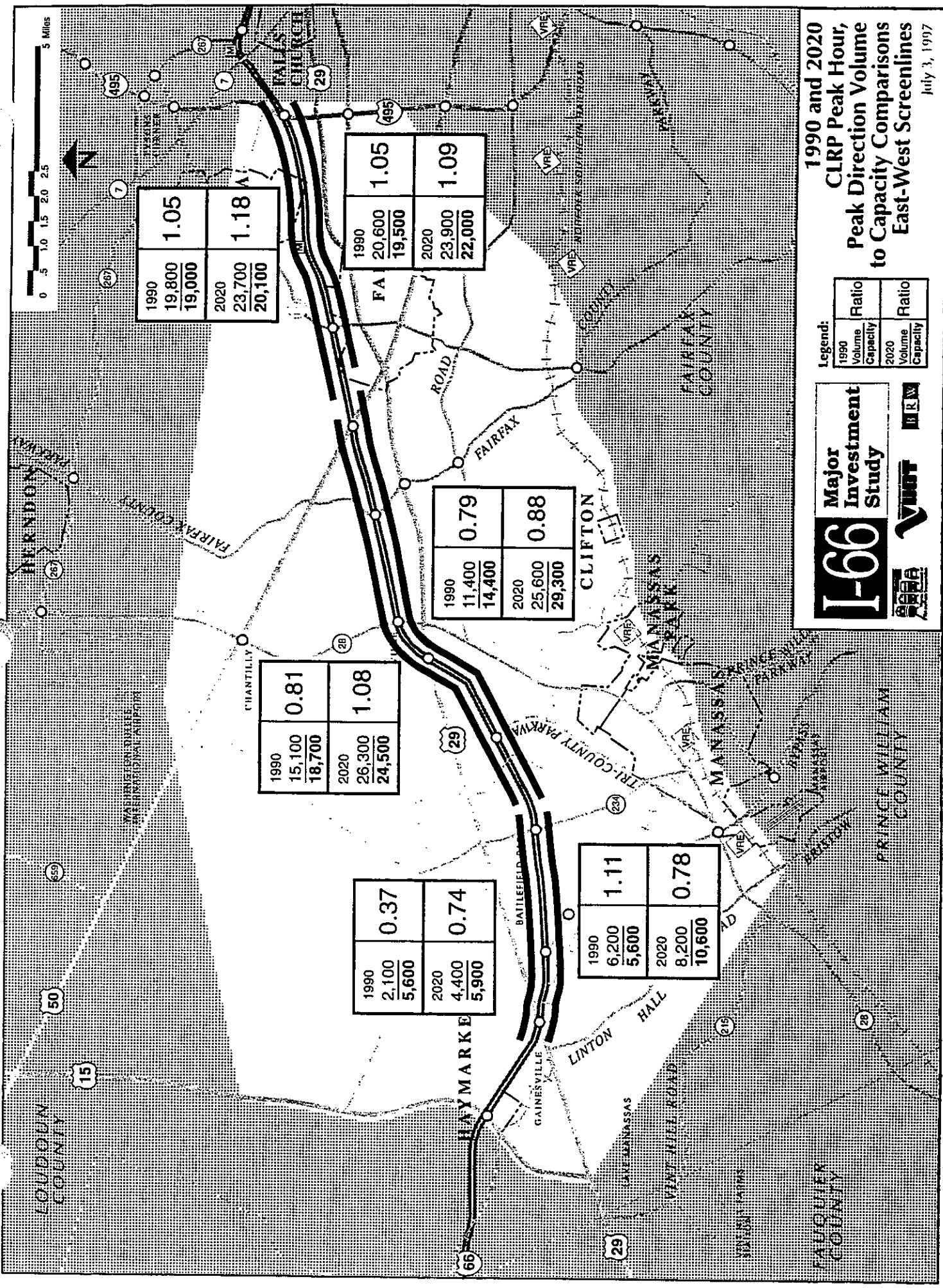


FIGURE 12

1990 AND 2020 CLRP PM PEAK HOUR, PEAK DIRECTION VOLUME TO CAPACITY COMPARISONS - NORTH-SOUTH SCREENLINES (FIGURE 13)

- In 1990, the PM peak hour traffic demand exceeded the available capacity on east-west routes just west of the Beltway and at Route 50.
- By 2020, traffic volumes will increase substantially but roadway improvements included in the CLRP will provide some additional roadway capacity.
- By 2020, PM peak hour, peak direction traffic volumes will exceed the available capacity on east-west routes just west of the Beltway, at Route 50 and east of Route 15. East of Route 234, the volume will approximately equal the capacity.



1990	19,800	1.05
2020	23,700	1.18
	19,000	
	20,100	

1990	20,600	1.05
2020	23,900	1.09
	19,500	
	22,000	

1990	11,400	0.79
2020	25,600	0.88
	14,400	
	29,300	

1990	15,100	0.81
2020	26,300	1.08
	18,700	
	24,500	

1990	2,100	0.37
2020	4,400	0.74
	5,600	
	5,900	

1990	6,200	1.11
2020	8,200	0.78
	5,600	
	10,600	

**1990 and 2020
CLRP Peak Hour,
Peak Direction Volume
to Capacity Comparisons
East-West Screenlines**
July 3, 1997

Legend:

1990	Volume	Capacity	Ratio
2020	Volume	Capacity	Ratio

I-66 Major Investment Study



Assumptions Regarding the Capital Beltway

July 1, 1997



I-66 CORRIDOR MIS

July 1, 1997

Page 1

ASSUMPTIONS REGARDING THE CAPITAL BELTWAY

Constrained Long Range Transportation Plan (CLRP)

The FY 97-2002 CLRP includes peak period HOV lanes on the Beltway from I-395 to the American Legion Bridge.

I-66 Corridor MIS Planning Assumptions

The following Planning Assumptions adopted by the I-66 Corridor MIS Policy Advisory Committee relate to the Capital Beltway:

- The I-66 Corridor MIS assumes the transportation facilities and services outside the primary study area as defined in the most recent CLRP.
- I-66 east of the Capital Beltway and the HOV lanes currently included in the CLRP for the Capital beltway will operate as an HOV-3+ facility in the peak direction during peak hours.
- The primary access route between the I-66 corridor and Tysons Corner will continue to be along I-66 and I-495.

Capital Beltway Study MIS Results Report (January 1997)

The Capital Beltway MIS Results Report includes a Recommended Strategy Package that identifies the transportation strategies that will be studied in more detail. The Recommended Strategy Package includes two highway/bus transit alternatives: (1) adding HOV lanes to the existing configuration, and (2) reconfiguring the roadway into an express/local operation. Under Alternative 1, the Beltway would be widened from the existing 4 lanes in each direction to 5 lanes in each direction with a concurrent-flow HOV lane or to 6 lanes in each direction with two barrier-separated HOV lanes. Under Alternative 2, the Beltway would have 6 lanes in each direction with a '2-4-4-2' lane configuration (2 local and 4 express lanes with lane management strategies in each direction). Alternative 2 options with and without HOV in the express lanes are being studied. Access to both the local and express lanes would be provided to/from I-66 and to/from Route 7. Both options would include interchange and safety improvements along with express bus planning. The next phase of the Capital Beltway study will develop these options in more detail and will include the preparation of environmental documentation to meet federal requirements. The summary recommendations of the Study are attached.

I-66 CORRIDOR MIS

July 1, 1997

Page 2

ASSUMPTIONS REGARDING THE CAPITAL BELTWAY

Recommended Assumptions for the Capital Beltway for I-66 Screen 2 Multi-Modal Investment Strategies (MMIS's)

It is recommended that the I-66 Screen 2 MMIS's assume that the Beltway is widened to add one concurrent flow HOV lane in each direction. This is consistent with the CLRP, the adopted I-66 Planning Assumptions, and Alternative 1 of the Recommended Strategy Package for the Capital Beltway.

The only except to this assumption will be I-66 Strategy #11. Strategy #11 consists of an express/local configuration with 6 lanes in each direction on I-66. It is recommended that Strategy #11 assume a comparable express/local configuration on the Beltway. This would be consistent with Alternative 2 of the Recommended Strategy Package for the Capital Beltway.

CAPITAL BELTWAY STUDY

MAJOR INVESTMENT STUDY PHASE RESULTS REPORT

January 1997

Prepared by
HNTB Corporation
De Leuw, Cather & Company of Virginia
and
JHK & Associates
for



State Project Numbers
0495-96A-F02, PE-100
0095-96A-F03, PE-100

Recommendations: After considering a wide range of possible solutions and public comments, VDOT concludes and recommends the following multimodal strategy for advancement to Phase Two of the Capital Beltway Study. The recommendation includes two main components: 1) lane management strategies in the Capital Beltway corridor that support high occupancy vehicle and bus transit use, and (2) rail transit planning in other corridors to increase connectivity among radial rail lines. The relationship of strategies assessed in the MIS process to the recommendations are shown in the following figure. The recommendations are more fully explained in following text.

**FIGURE ES-2
RECOMMENDED STRATEGY PACKAGE**

Capital Beltway Study, Phase Two: Advance the Recommendations of Phase One		
Phase One (MIS)	Phase Two: Advance Recommendations of Phase One	
	Highway/Bus Transit	Rail Transit
Recommended conceptual solutions to corridor transportation problems:	Study by VDOT: Preliminary Engineering and Environmental Documentation	Study by Transit Agencies or Other Study Team: System Planning and Conceptual Engineering
Strategy O-3a: Concurrent Flow Lanes	Alternative 1: Adding HOV Lanes to Existing Configuration (2 initial options: concurrent flow, barrier-separated)	Further Rail Transit Planning for connectivity among radial lines, to identify most cost-effective corridors that achieve transit benefits to region (Strategies K + L [rail portion])
Strategy O-3b: Barrier Separated Lanes		
Strategy P-1: Simple Express/ Local Lane Configuration (no HOV)	Alternative 2: Reconfigure into Express/Local Operation (2 initial options: express/ local with and without HOV in express lanes)	
Strategy P-2: Include HOV lane(s) within Express Lanes		
Enhancement Packages: B+C+D (safety & enforcement) E (TCM/TDM programs) H+I (ITS programs)	Include in Both Alternatives: - Interchange Improvements (Elements of Strategy R) - Enhancement Packages (Strategies B+C+D; E, H+I) - Express Bus Planning (Elements of Strategies K+ L [bus portion])	
Transit 1: Corridor express bus planning with above strategies		
Transit 2: Further study of regional rail system connectivity via other corridors		
Baseline for comparison: CLRP (including HOV lanes between Springfield Interchange and Dulles Toll Road).		

1. **Highway/Bus Transit Improvements:** Phase Two of the Capital Beltway Study should refine and further evaluate the conceptual designs of two lane management alternatives: (1) adding

HOV lanes to the current facility, and (2) creating an express/local configuration. Both lane management alternatives should include evaluation of designs for rebuilding interchanges, planning for express bus service in the Beltway corridor, and enhancement programs (listed below). Phase Two of the Capital Beltway Study is assumed to include preliminary engineering of the lane management strategies and the preparation of documents to meet environmental process requirements.

Express Bus Component: The recommended HOV lanes or express/local configuration also can readily accommodate express bus service to facilitate movement between major activity centers proximate to the Beltway and to link Metro's Orange and Blue Lines and Virginia Rail Express (VRE) commuter rail service. To fully integrate such transit-supportive facilities into proposed improvements, VDOT should incorporate appropriate express bus service planning for the Capital Beltway corridor, including facilities such as park-and-ride lots, into Phase Two of the Capital Beltway Study.

Enhancement Components: Three sets of supporting strategies were identified that would enhance the performance of the Recommended Strategy Package. These are recommended for further evaluation in Phase Two in conjunction with the recommended lane management strategies:

- Operations and Safety Enhancements: Efforts to increase driver education, to more strictly enforce traffic laws, and to provide motorist assistance should be implemented on an on-going basis. The Department should lead or support cooperative efforts to implement these programs.
 - Transportation Control Measures and Transportation Demand Management Measures: A program of 13 measures (defined in Chapter V, Section D.1) were identified that would be effective for the Capital Beltway corridor. The Department should lead or support cooperative efforts to implement these programs and to ensure that the design of capital improvements supports these measures.
 - ITS Enhancements: Efforts to provide additional information to drivers about current conditions and situations, and to better control traffic flow on intersecting roads should be implemented on an on-going basis. Current VDOT Intelligent Transportation System (ITS) plans and future ITS programs should be implemented in coordination with the phased implementation program.
2. Rail Transit Planning: Because the share of regional transit use showed a significant increase when radial rail lines were connected (but did not have a significant impact on the Beltway corridor), additional study of rail transit from an areawide or regional perspective is recommended. Connectivity via other corridors, of less than the 66 mile length tested in this MIS, may produce more cost-effective ways to increase transit ridership or transit share. Such additional study would include transportation modeling tools appropriate to detailed transit planning to test alternative routings, operating scenarios and other issues necessary to fully assess the viability of rail transit. Because such planning would require the participation of

public agencies in Virginia and Maryland, it is recommended that transit authorities or a multijurisdictional team undertake this further planning. Detailed planning of the Recommended Strategy Package's alternatives for highway improvement and express bus planning should be coordinated with the recommended rail transit study.

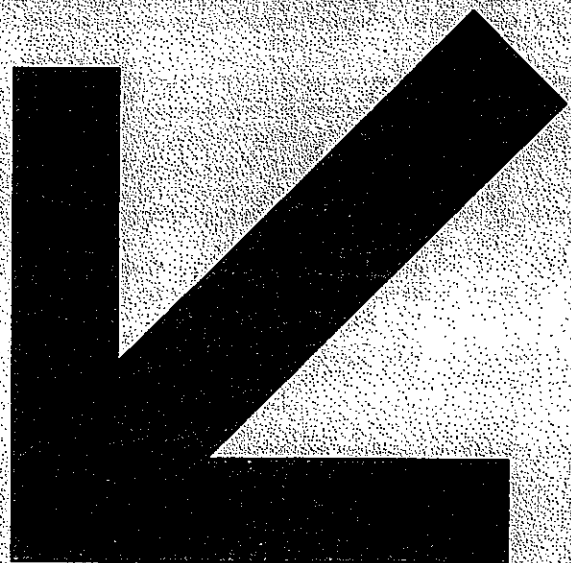
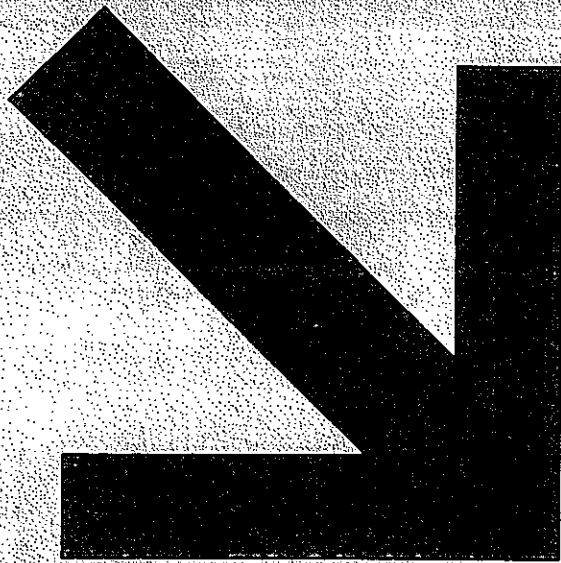
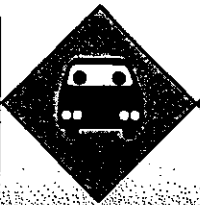
3. Priority: Information gathered in this MIS consistently have pointed out that there are "hot zones" (shown on Chapter VI, Figure 17), areas in which there is severe congestion and safety deficiencies along the Beltway. The area along I-66 to Tysons Corner is the location of highest congestion. VDOT should initially focus on developing preliminary designs for improvements in this area.
4. Responsibilities: VDOT should continue to lead the development of highway improvement elements of the Recommended Strategy Package, and assume the lead in planning for express bus facilities related to the Capital Beltway. Transit agencies or an interstate study team should lead the development of rail transit strategies or bus transit planning outside of the Beltway corridor. It is recommended that the studies conducted for rail transit be parallel to Phase Two of the Beltway Study and therefore be initiated in a timely manner.
5. Supporting Studies: Phase Two of the Capital Beltway Study should include additional analyses to support implementation of the Recommended Strategy Package. In addition to detailed planning, preliminary engineering and environmental studies for the elements of the Recommended Strategy Package, other issues related to optimizing the transportation functions of the Capital Beltway should be analyzed. These include, but are not limited to:
 - Funding Options. The proposed capital improvements are eligible for federal funding. For the purposes of completing the MIS, it is assumed that 80 percent federal funds, matched with 20 percent state funds, would be available over time for a series of interstate highway improvement projects. However, there are numerous transportation projects in the region which also anticipate use of federal and state funds. A regional transportation financing study is needed to identify and analyze funding options for Beltway improvements and competing transportation projects in Northern Virginia. To determine the viability of increasing the pool of available transportation funding in the region, potential sources of funding, magnitudes of funding generated and institutional issues should be identified that could be used.
 - Interface with Maryland MIS. Results of the MIS being conducted for the Maryland portion of the Capital Beltway may indicate a different operational configuration than Virginia's decision, which would require development of transition zones to ensure seamless operations of the Beltway. The Maryland MIS currently includes an option to widen the American Legion Bridge, which would allow compatible roadway configurations and operations between the two states. Planning coordination between the states will continue during Phase Two of the Capital Beltway Study.

- **Roadway Connectivity.** The relationship of Beltway improvements to the connecting arterial roadway network should be reviewed to identify improvements needed on those roadways to ensure smooth transitions and coordinated operations.

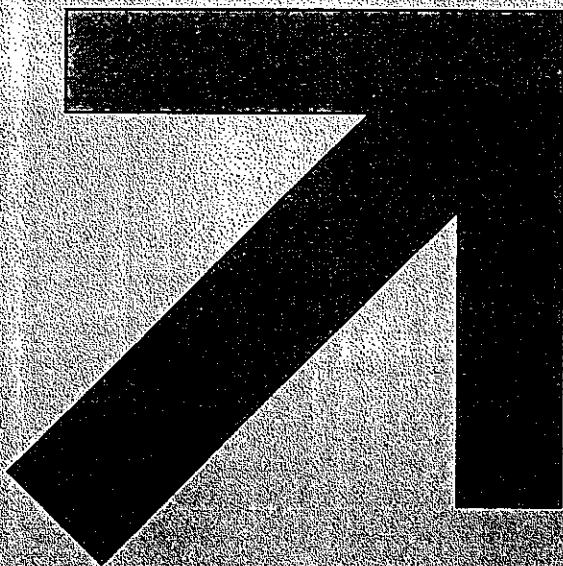


I-66
CORRIDOR

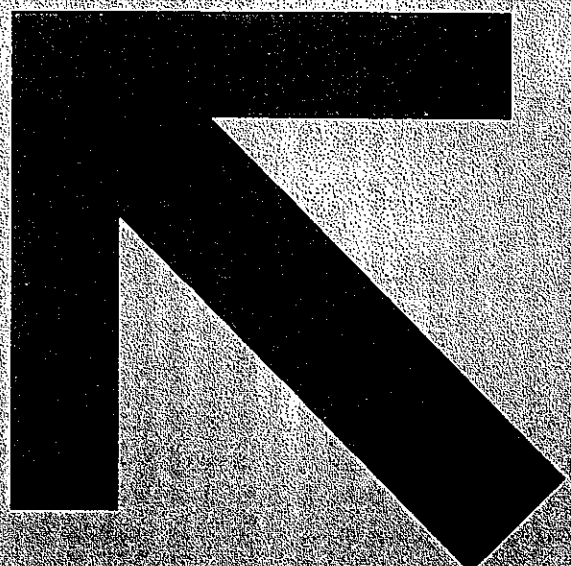
**Major
Investment
Study**



Screen 2 Multi-Modal Strategy Definition



June, 1997



SCREEN 2 MULTI-MODAL STRATEGY DEFINITION

Prepared for:

The Commonwealth of Virginia
Department of Rail and Public Transportation
and
Department of Transportation

Prepared by:

BRW, Inc.

June 10, 1997

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1.0 INTRODUCTION

The I-66 Corridor Major Investment Study (MIS) is being conducted to develop a regional consensus on a comprehensive transportation investment strategy appropriate to address transportation issues in the corridor over the next 20 to 25 years which:

- Responds to current imbalances between existing transportation supply and demand;
- Supports anticipated growth and development in the corridor;
- Integrates the multi-modal transportation systems in the corridor; and
- Supports previous and on-going regional and local transportation planning processes.

The preferred transportation investment strategy will be identified based on a successive, iterative evaluation of modal elements and alternative strategies through a multi-step screening process. This screening process, which is summarized in Figure 1 will identify those elements and strategies which best meet the transportation needs of the corridor. At the conclusion of each screen, the most promising elements and strategies will be refined, modified, and reformulated to improve the extent to which the alternative addresses corridor needs.

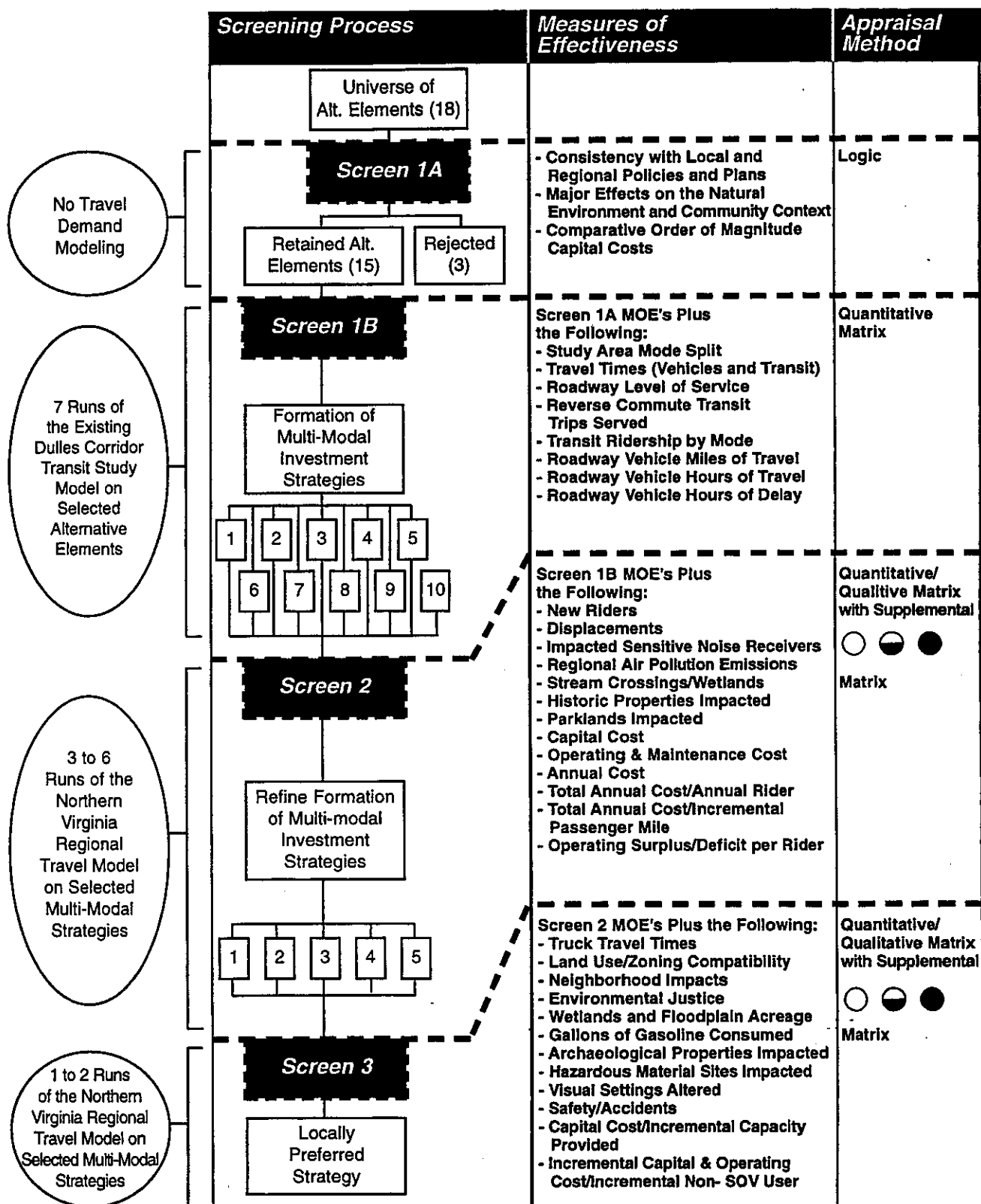
The purpose of this report is to document the multi-modal transportation investment strategies recommended for evaluation in Screen 2 of the evaluation process. The Screen 1 evaluation considered single-mode transportation elements. The Screen 2 strategies represent multi-modal combinations of the transportation elements reviewed in Screen 1. The results of the Screen 2 evaluation will be used to define refined multi-modal strategies incorporating the most promising features of the Screen 2 strategies for evaluation in Screen 3.

Screen 2 Multi-Modal Investment Strategies (MMIS's) were discussed at meetings of the I-66 Corridor MIS Technical Advisory Committee (TAC) on November 21, 1996, December 5, 1996, February 20, 1997 and May 29, 1997. The I-66 Corridor MIS Policy Advisory Committee (PAC) reviewed the Screen 2 multi-modal investment strategies at their meeting on March 13, 1997. Input from the TAC and PAC has been incorporated into this set of strategies recommended for evaluation in Screen 2. The following strategies were revised in response to committee comments:

- Strategies #2, #4 and # 7 - The PAC recommended that the LRT elements of these strategies be modified to include a north-south linkage along Route 28 connecting the Manassas and Dulles areas.
- Strategy #4 - The PAC recommended that the study team should consider the Central Fairfax Bypass (also referred to as the Fairfax City Loop Road). A Central Fairfax Bypass alignment will be incorporated into Strategy #4. This strategy was selected

Figure 1

Overview of I-66 MIS Alternative Elements/Strategies Evaluation Process



Note: Screen 1B will use MWCOG Land Use Version 5.2. Subsequent screens will use Version 5.3. Fig. 1 #9606-0047

because it includes no other single occupancy vehicle (SOV) improvements and the Metrorail terminal station remains at Vienna. These two conditions are expected to maximize utilization of the proposed bypass. The alignment for study in the MIS will be defined in conjunction with the Virginia Department of Transportation (VDOT), Fairfax County and Fairfax City.

- Strategy #2 - This strategy originally included improvements to both Route 50 and Route 29. The TAC commented that there should be alternatives that include improvements to I-66 without improvements to parallel arterials. In response to the TAC comment and because of potential right-of-way impacts along Route 50 and Route 29, the improvements to Route 50 and Route 29 were eliminated from this strategy.
- Strategies #1, #3, #8 and #9 - The PAC expressed concerns about route continuity inside the Capital Beltway. In response to these concerns, the SOV expansion proposed for Route 29 between Fairfax Circle and I-495 is recommended for testing only as part of the County Highway Plan strategy. It is recommended that in this area the arterial SOV expansion investment strategy for additional study focus on Route 50 for the following reasons:
 - There is an interchange at I-495 and Route 50 but not at I-495 and Route 29.
 - Route 29 inside the beltway is generally four lanes and no significant improvements are included in the Constrained Long Range Plan (CLRP). The CLRP includes widening Route 50 to six lanes from the Fairfax City line to the Arlington County line.

2.0 PRINCIPLES GUIDING THE DEVELOPMENT OF SCREEN 2 STRATEGIES

- The Screen 2 strategies should be formulated as complete alternatives, likely to solve the transportation problems in the corridor. The transportation problems identified in the study are listed in Table 1. Corridor goals and objectives are listed in Table 2.
- Analyses completed to date (Screen 1B travel forecasts) indicate that none of the single-mode alternative elements in isolation will solve the transportation problems in the corridor.
- The Planning Assumptions adopted by the PAC (summarized in Table 3) should be used to guide the development of Screen 2 strategies.
- The Screen 2 strategies should represent a range of modal choices including strategies focusing on transit improvements and strategies focusing on highway improvements.
- The Screen 2 evaluation will include an evaluation of both the Baseline Alternative (the Constrained Long Range Plan [CLRP]) and the Enhanced Baseline Alternative (the CLRP with significant bus system enhancements). The Enhanced Baseline is intended to represent the low capital cost Transportation System Management/Travel Demand Management (TSM/TDM) alternative required to be evaluated in an environmental review.
- All of the Screen 2 strategies will include a level of bus transit service comparable to that defined as part of the Enhanced Baseline alternative. The transit service will be reoriented to take advantage of fixed transit facilities (rail or high occupancy vehicle [HOV]) provided as part of each strategy.
- The Screen 2 strategies should represent the complete set of combinations of the alternative modal elements in the corridor. The major alternative elements being considered are:
 1. SOV - Adding general purpose lane capacity to I-66 and/or adjacent arterials.
 2. HOV - Adding HOV lanes on I-66 and/or adjacent arterials.
 3. LRT - Construction of a light rail transit system in the corridor.
 4. Metro - The extension of the existing Metrorail system in the corridor beyond the existing terminus at Vienna.

TABLE 1
I-66 CORRIDOR TRANSPORTATION PROBLEMS

TRANSPORTATION SERVICE/MOBILITY
<ul style="list-style-type: none"> • Existing Vehicular Congestion in Both Peak Periods. • Forecast of Worse Congestion and an Increase in Vehicle-Miles of Travel in the Year 2020. • Insufficient Transit Accessibility to Employment Opportunities in Corridor. • Lack of Management and Coordination of Truck Movement in the Corridor. • Lack of Coordination and Management of the Multi-Modal Transportation System in the Corridor.
ADJACENCY AND AREA-WIDE ENVIRONMENTAL IMPACTS
<ul style="list-style-type: none"> • Inadequate Right-of-Way and Physical Limitations on Ability to Expand Corridor Infrastructure. • Existing and Forecasted Dispersion of Population and Employment Throughout the Corridor and the Associated Travel Patterns. • Concerns about Air Quality
TRANSPORTATION INVESTMENT
<ul style="list-style-type: none"> • Lack of Financial Resources to Pay for Needed Transportation Facilities and Services.

2-5-96

TABLE 2
I-66 CORRIDOR GOALS AND OBJECTIVES

TRANSPORTATION SERVICE/MOBILITY
<ul style="list-style-type: none"> • Accommodate Existing and Future Mobility Demands. • Improve Regional Access to I-66 Corridor Activity Centers and Improve Access from the I-66 Corridor to the Region. • Improve Goods Movement.
ADJACENCY AND AREA-WIDE ENVIRONMENTAL IMPACTS
<ul style="list-style-type: none"> • Coordinate the Transportation Improvements to Complement Existing and Future Land Uses. • Minimize the Adverse Transportation Related Environmental Impacts and Foster Positive Environmental Impacts with Transportation Improvements.
TRANSPORTATION INVESTMENT
<ul style="list-style-type: none"> • Provide a Cost-Effectiveness Investment Strategy for the I-66 Corridor.

2-5-96

TABLE 3
SUMMARY OF PLANNING ASSUMPTIONS TO GUIDE THE DEVELOPMENT OF
SCREEN 2 MULTI-MODAL INVESTMENT STRATEGIES

1. *The I-66 Corridor MIS assumes the transportation facilities and services outside the primary study area as defined in the most recent CLRP.*
2. *The selected investment strategy will meet air quality conformity requirements.*
3. *Alternatives will be evaluated using the MWCOG Round 5.3 land use projections.*
4. *The fixed-guideway transit component (or components) of an alternative should perform a line haul function and use buses as a feeder to the fixed-guideway system.*
5. *The existing Norfolk-Southern rail right-of-way from Manassas-Gainesville-Haymarket will be available for the extension of VRE service.*
6. *I-66 east of the Capital Beltway and the HOV lanes currently included in the CLRP for the Capital Beltway will operate as an HOV-3+ facility in the peak direction during peak hours.*
7. *The primary access route between the I-66 corridor and Tysons Corner will continue to be along I-66 and I-495.*
8. *A transfer at the Vienna Metrorail station between LRT service and Metrorail service is feasible from an engineering perspective.*
9. *The relative cost of travel by auto and travel by transit will not change significantly by the forecast year of 2020.*
10. *For the purposes of Screen 2, alternative investment strategies should not be constrained by capital dollars currently available.*

- Taken in combinations of two and three, there are ten combinations of the four major modal elements in the corridor:

1. SOV+HOV
2. SOV+LRT
3. SOV+Metro
4. HOV+LRT
5. HOV+Metro
6. LRT+Metro
7. SOV+HOV+LRT
8. SOV+HOV+Metro
9. SOV+LRT+Metro
10. HOV+LRT+Metro

- The other modal element under consideration in the corridor is the extension of Virginia Railway Express (VRE) service to Haymarket. This element could be combined with any of the multi-modal combinations defined above. Potential VRE ridership is minor relative to the person-carrying capacity of the four major modes discussed above. For the purposes of the Screen 2 evaluation, it is recommended that VRE be evaluated independently. If the Screen 2 evaluation of VRE is favorable, it will be incorporated into the Screen 3 evaluation process.
- The terminus of each of the modal elements will be evaluated and further defined as an outcome of the Screen 2 evaluation.
- The basic improvements associated with each modal element are:

- | | |
|-------|--|
| SOV | <ul style="list-style-type: none"> - Add one general purpose lane in both directions to I-66 between Route 50 and I-495 - "super arterials" on Route 50 between Route 28 and I-495 and on Route 29 between Route 28 and Fairfax Circle |
| HOV | <ul style="list-style-type: none"> - Barrier separated HOV lanes on I-66 from I-495 to Gainesville - Diamond (concurrent) HOV lanes on Route 29 from Gainesville to Route 15 |
| LRT | <ul style="list-style-type: none"> - LRT service to both Dulles and Manassas serving the terminal Metro station - The south LRT line terminates either in Manassas Park or in the vicinity of Manassas Airport |
| Metro | <ul style="list-style-type: none"> - Metro extended to a terminal station at Centreville - Per the direction of the PAC, an extension of Metro to Gainesville will also be considered. |

- Screen 2 should evaluate a strategy that includes general purpose express lanes on I-66 connected to an upgraded beltway with an express/local configuration and six lanes in each direction consistent with the recommendations of the beltway MIS.
- Screen 2 should evaluate a 'Super Bus' option to represent a mid-range cost strategy between the Enhanced Baseline and fixed transit facility strategies.
- Screen 2 should evaluate an option that includes selected transportation improvements in the corridor that are part of the County Comprehensive Plans but not in the CLRP.

3.0 RECOMMENDATIONS FOR SCREEN 2 STRATEGIES

The transportation strategies recommended to be evaluated as part of Screen 2 are illustrated on Figures 2 through 12 and discussed below.

Strategy #1 SOV+HOV

- Improvements to I-66, Rt. 29 and Rt. 50
- Barrier separated HOV on I-66
- HOV extension on Rt. 29

This strategy is primarily highway oriented. It responds to the Screen 1B finding that the HOV demand in the corridor would warrant barrier separated HOV lanes.

Strategy #2 SOV+LRT

- Improvements to I-66 (only)
- LRT to Rt. 28/50 and Manassas

This strategy would combine additional SOV capacity on I-66 with LRT service focused on the existing Metrorail terminus at Vienna.

Strategy #3 SOV+Metro

- Improvements to I-66, Rt. 29 and Rt. 50
- Metrorail extension to Gainesville

The PAC has specifically asked for an evaluation of Metrorail extension to Gainesville.

Strategy #4 HOV+LRT

- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- LRT to Rt. 28/50 and Manassas
- Central Fairfax Bypass

This strategy combines barrier separated HOV with LRT lines serving the Dulles Airport area, the Manassas area, and the existing Metrorail terminus at Vienna. This strategy also includes the Central Fairfax Bypass connecting Jermantown Road and Waples Mill Road.

Strategy #5 HOV+Metro

- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- Metrorail extension to Centreville

This strategy combines barrier separated HOV with an extension of the existing Metrorail system to Centreville.

Strategy #6 LRT+Metro

- LRT to Rt. 28/50 and Manassas Airport with connection at Centreville
- Metrorail extension to Centreville

This strategy tests the effectiveness of extending Metrorail to Centreville with an LRT connection to the north and south from the Metrorail terminal station. The south LRT line follows the Route 28 Bypass south to the vicinity of the Manassas Airport.

Strategy #7 SOV+HOV+LRT

- Improvements to I-66 (only)
- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- + LRT to Rt. 28/50 and Manassas

This strategy would combine additional SOV capacity on I-66 with barrier separated HOV and LRT service focused on the existing Metrorail terminus at Vienna. This strategy would not include additional SOV capacity on Route 29 or Route 50.

Strategy #8 SOV+HOV+Metro

- Improvements to I-66, Rt. 29 and Rt. 50
- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- Metrorail extension to Centreville

This strategy combines additional SOV capacity on I-66, Route 29 and Route 50, barrier separated HOV and extension of the existing Metrorail system to Centreville.

Strategy #9 SOV+LRT+Metro

- Improvements to I-66, Rt. 29 and Rt. 50
- LRT to Rt. 28/50 and Manassas with connection at Centreville
- Metrorail extension to Centreville

This strategy combines additional SOV capacity on I-66, Route 50 and Route 29 with LRT service focused on an extended Metrorail terminus station at Centreville. The south LRT line follows the Route 28 Bypass south to the vicinity of the Manassas Airport.

Strategy #10 HOV+LRT+Metro

- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- LRT to Rt. 28/50 and Manassas with connection at Centreville
- Metrorail extension to Centreville

This strategy combines barrier separated HOV with LRT lines to Route 28/50 and Manassas serving an extended Metrorail terminus station at Centreville. The south LRT line follows the Route 28 Bypass south to the vicinity of the Manassas Airport.

Strategy #11 I-66 Express/Local

- Widen I-66 to six lanes in each direction
- Widen I-495 to six lanes in each direction

This strategy would widen I-66 to six lanes in each direction with an express/local configuration. This strategy would also assume that I-495 is widened to six lanes with an express/local configuration consistent with the Recommended Strategy Package in the Capital Beltway Study MIS Results Report (January 1997).

Strategy #12 'Super Bus'

This strategy would consist of significant bus system improvements including extension of existing service, provision of new service between various origins and destinations, and reduced bus headways. This strategy would also include increased frequency of service on Metrorail to Vienna. This strategy is intended to represent a more flexible transit improvement than the fixed transit facilities that may better serve the travel patterns in the corridor.

Strategy #13 County Highway Plan

This strategy would include selected roadway improvements that are part of the County Comprehensive Plans but are not in the CLRP. The improvements to be included in the strategy will be defined in consultation with county staff. Preliminary recommendations for inclusion in this strategy include the following roadways:

- Tri-County Parkway
- Stone/Braddock Road Connector
- Rt. 234 Bypass north of I-66
- Rt. 236 upgrade to six lanes

Strategy #1 SOV+HOV

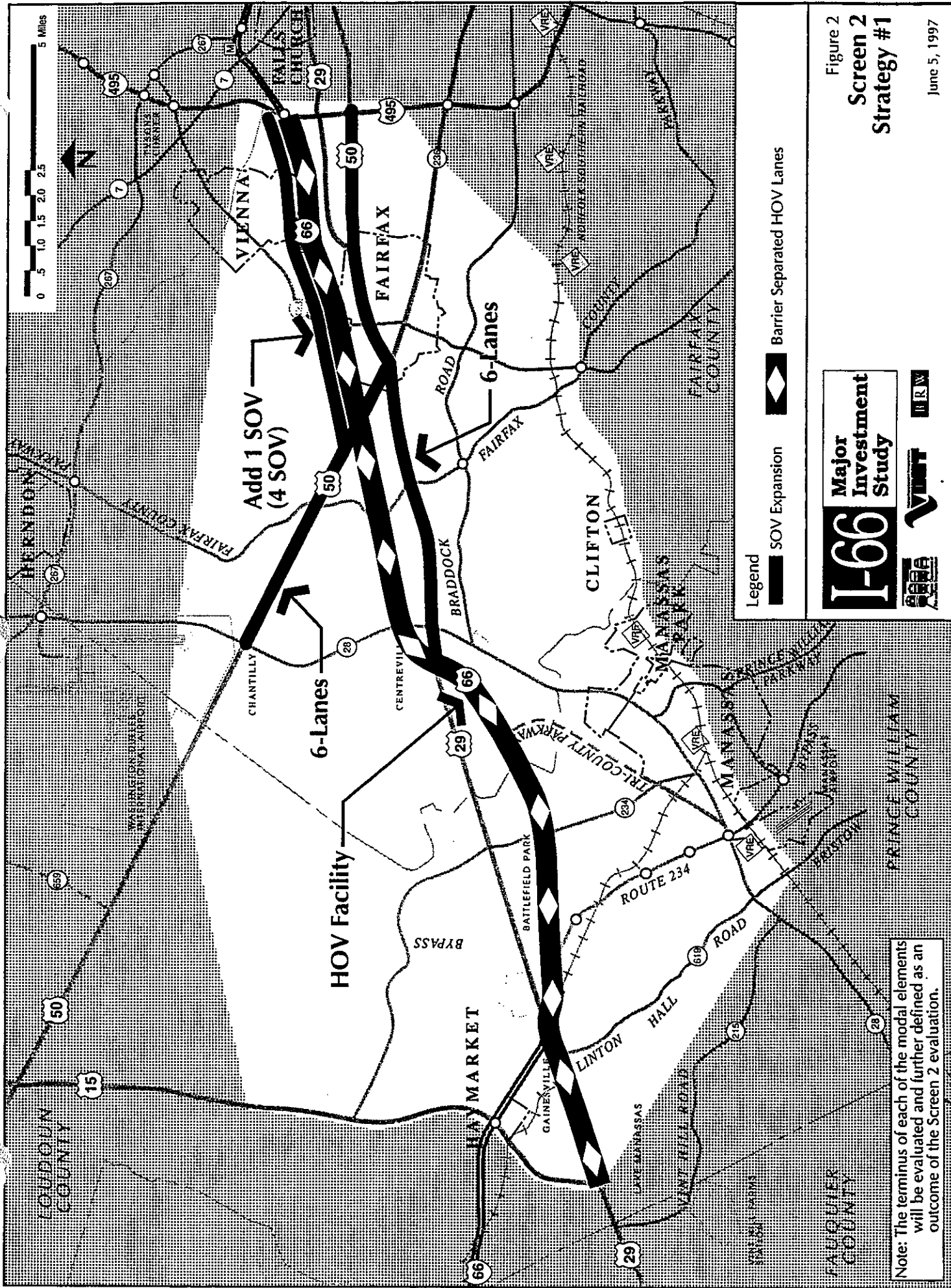
- Improvements to I-66, Rt. 29 and Rt. 50
- Barrier separated HOV on I-66
- HOV extension on Rt. 29

This strategy is primarily highway oriented. It responds to the Screen 1B finding that the HOV demand in the corridor would warrant barrier separated HOV lanes.

Improvements to I-66 would include construction of two, barrier-separated, reversible HOV lanes and adding a general purpose SOV lane in each direction. The HOV improvements would extend from I-495 west to Gainesville. The SOV improvements would extend from I-495 to Route 50. The HOV lanes would operate one-way eastbound in the morning and one-way westbound in the afternoon.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Route 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 would be widened to six-lane arterials. These roads would be configured as 'super-arterials' with grade separations at most cross street intersections.



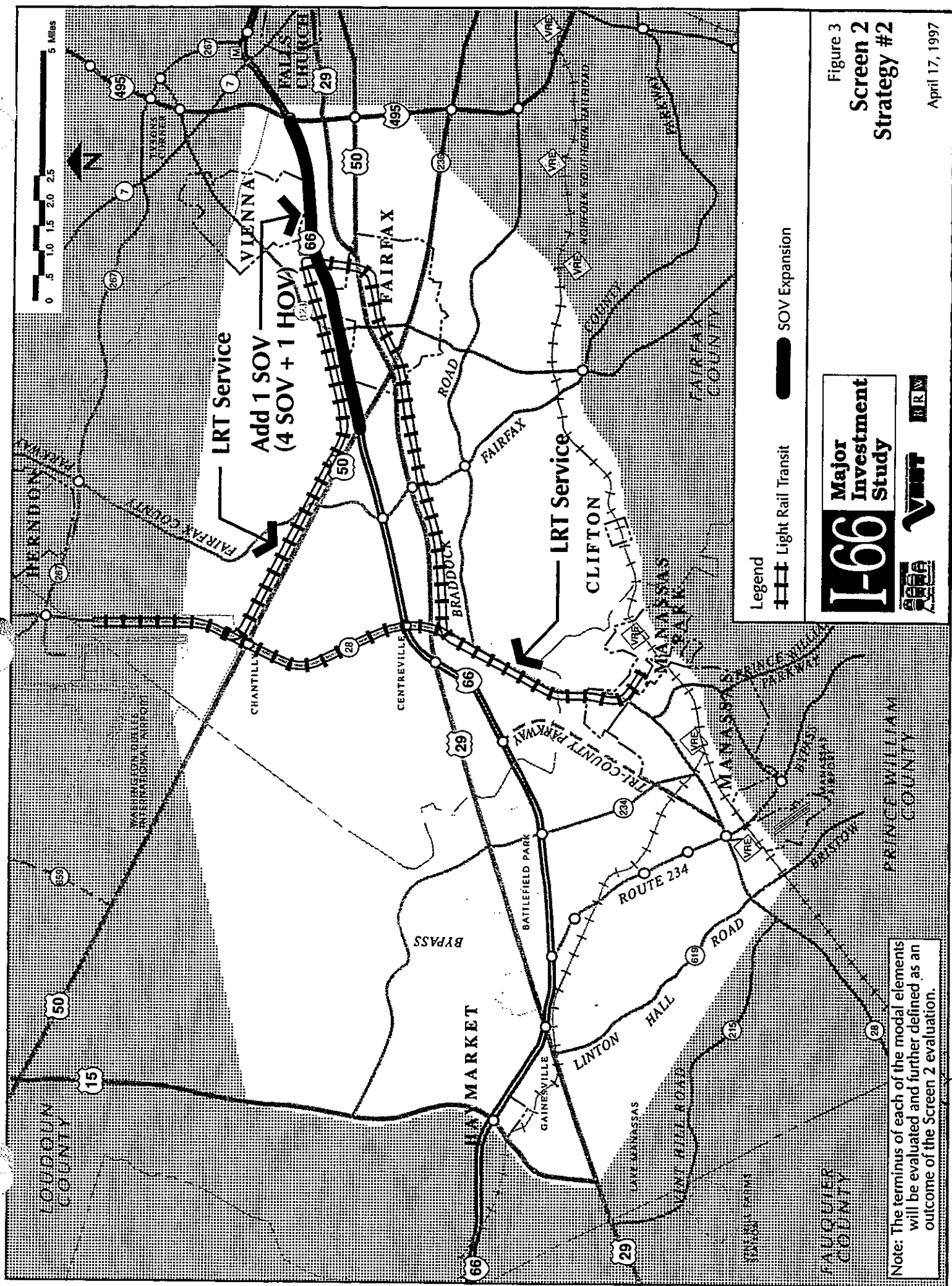
Strategy #2 SOV+LRT

- Improvements to I-66 (only)
- LRT to Rt. 28/50 and Manassas

This strategy would combine additional SOV capacity on I-66 with LRT service focused on the existing Metrorail terminus at Vienna.

The improvements to I-66 would add one additional SOV lane in each direction between I-495 and Route 50.

LRT service connecting the Dulles Airport area, the Manassas area and the Metrorail terminal station at Vienna would be provided.



Strategy #3 SOV+Metro

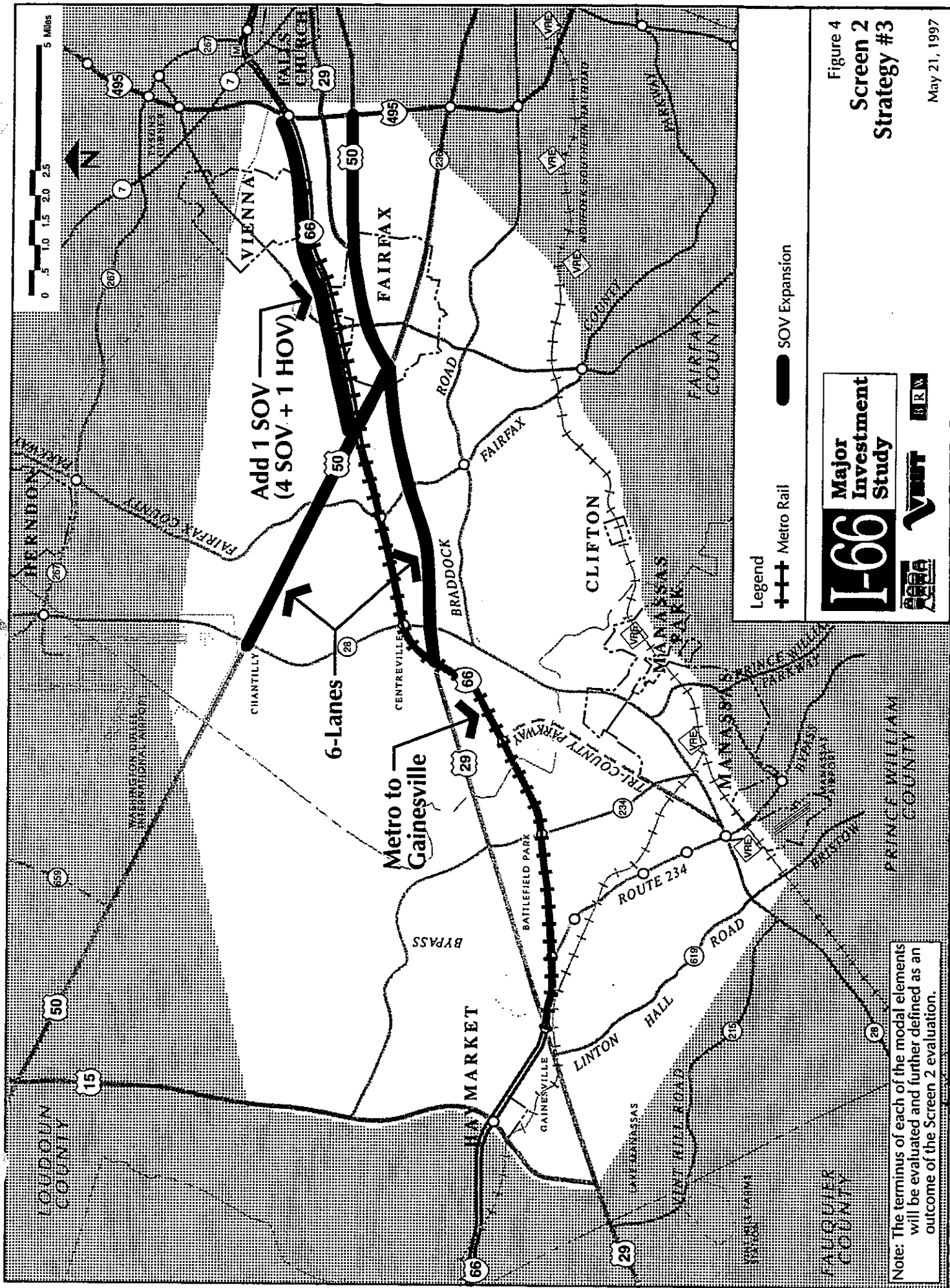
- Improvements to I-66, Rt. 29 and Rt. 50
- Metrorail extension to Gainesville

The PAC has specifically asked for an evaluation of Metrorail extension to Gainesville.

The improvements to I-66 would add one additional SOV lane in each direction between I-495 and Route 50.

Route 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 would be widened to six-lane arterials. These roads would be configured as 'super-arterials' with grade separations at most cross street intersections.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Gainesville with a number of intermediate station sites.



I-66

Major Investment Study



Figure 4
Screen 2
Strategy #3

May 21, 1997

Note: The terminus of each of the modal elements will be evaluated and further defined as an outcome of the Screen 2 evaluation.

Strategy #4 HOV+LRT

- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- LRT to Rt. 28/50 and Manassas
- Central Fairfax Bypass

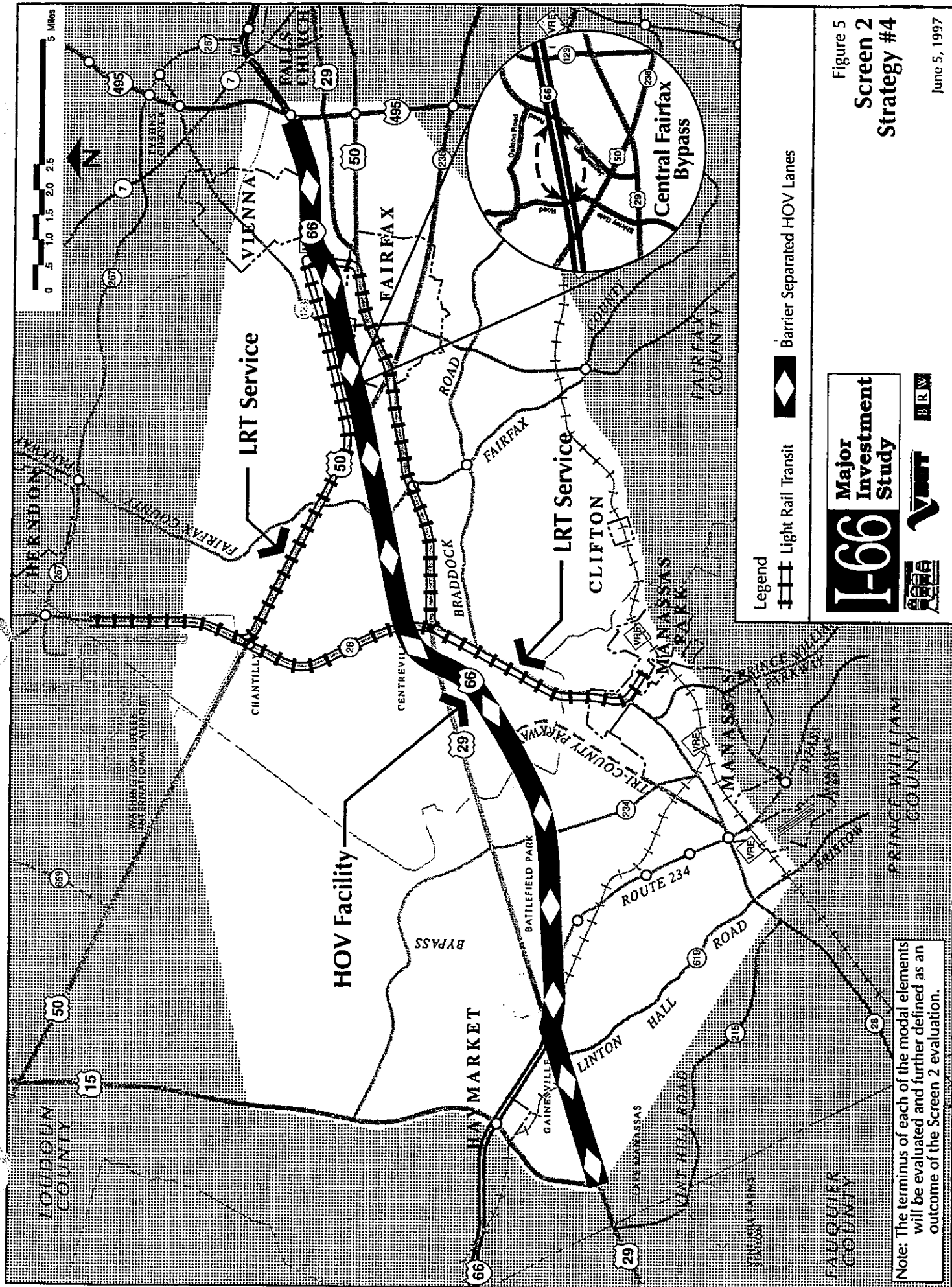
This strategy combines barrier separated HOV with LRT lines to Route 28/50 and Manassas serving the existing Metrorail terminus at Vienna.

Improvements to I-66 would include construction of two, barrier-separated, reversible HOV lanes and adding a general purpose SOV lane in each direction. The HOV improvements would extend from I-495 west to Gainesville.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

LRT service connecting the Dulles Airport area, the Manassas area, and the Metrorail terminal station at Vienna would be provided.

This strategy also includes the Central Fairfax Bypass connecting Jermantown Road and Waples Mill Road as part of a western bypass of the City of Fairfax.



I-66 Major Investment Study

VR **BRW**

Figure 5
Screen 2
Strategy #4

June 5, 1997

Note: The terminus of each of the modal elements will be evaluated and further defined as an outcome of the Screen 2 evaluation.

Strategy #5 HOV+Metro

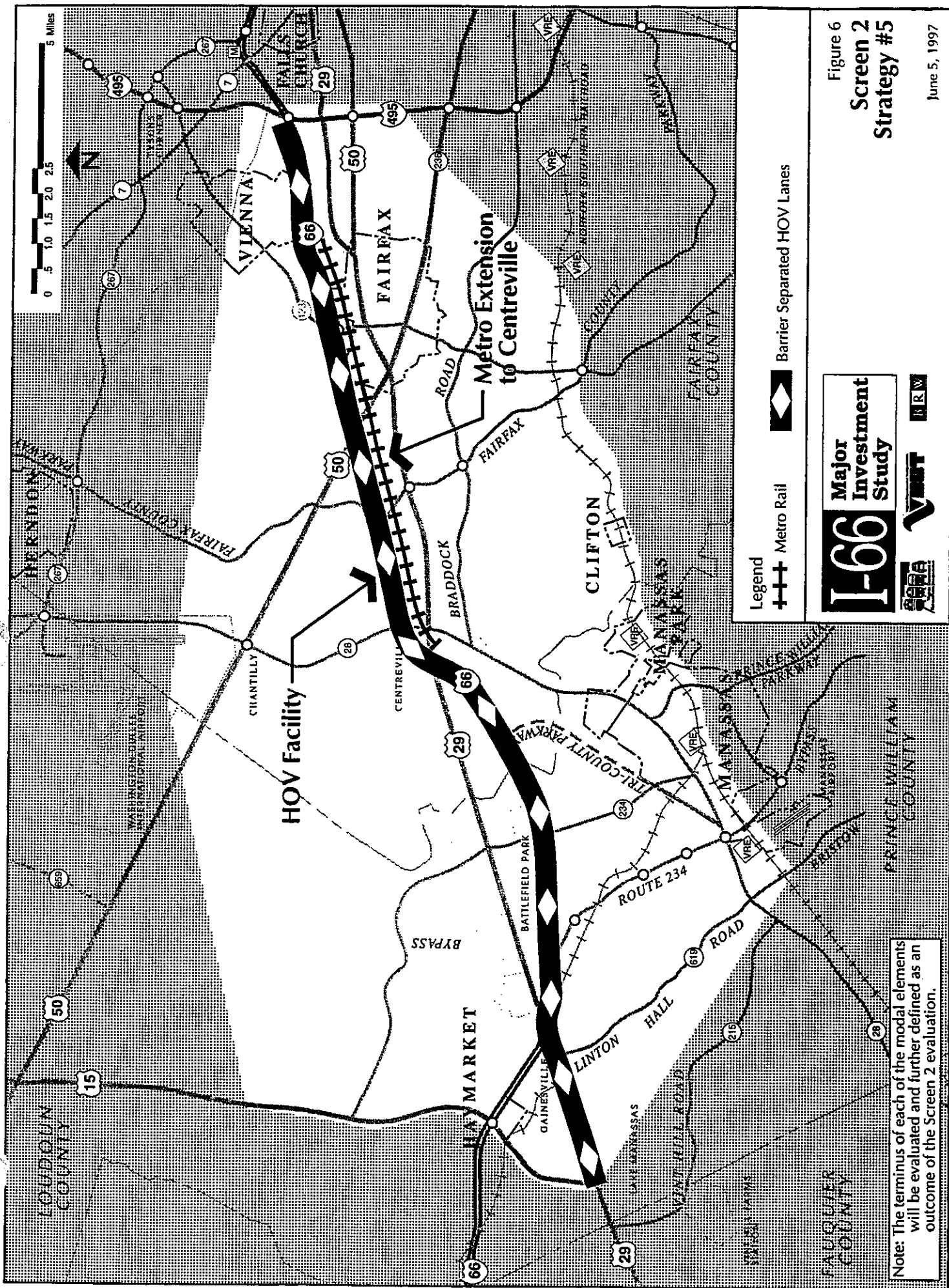
- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- Metrorail extension to Centreville

This strategy combines barrier separated HOV with an extension of the existing Metrorail system to Centreville.

Improvements to I-66 would include construction of two, barrier-separated, reversible HOV lanes and adding a general purpose SOV lane in each direction. The HOV improvements would extend from I-495 west to Gainesville.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.



Strategy #6 LRT+Metro

- LRT to Rt. 28/50 and Manassas Airport with connection at Centreville
- Metrorail extension to Centreville

This strategy tests the effectiveness of extending Metrorail to Centreville with an LRT connection to the north and south from the Metrorail terminal station.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.

There would be two LRT lines focused on the Centreville Metrorail station. The south LRT line follows the Route 28 Bypass south to the vicinity of Manassas Airport. The north LRT line would follow Stone Road to Route 28 to the vicinity of Dulles Airport.

Strategy #7 SOV+HOV+LRT

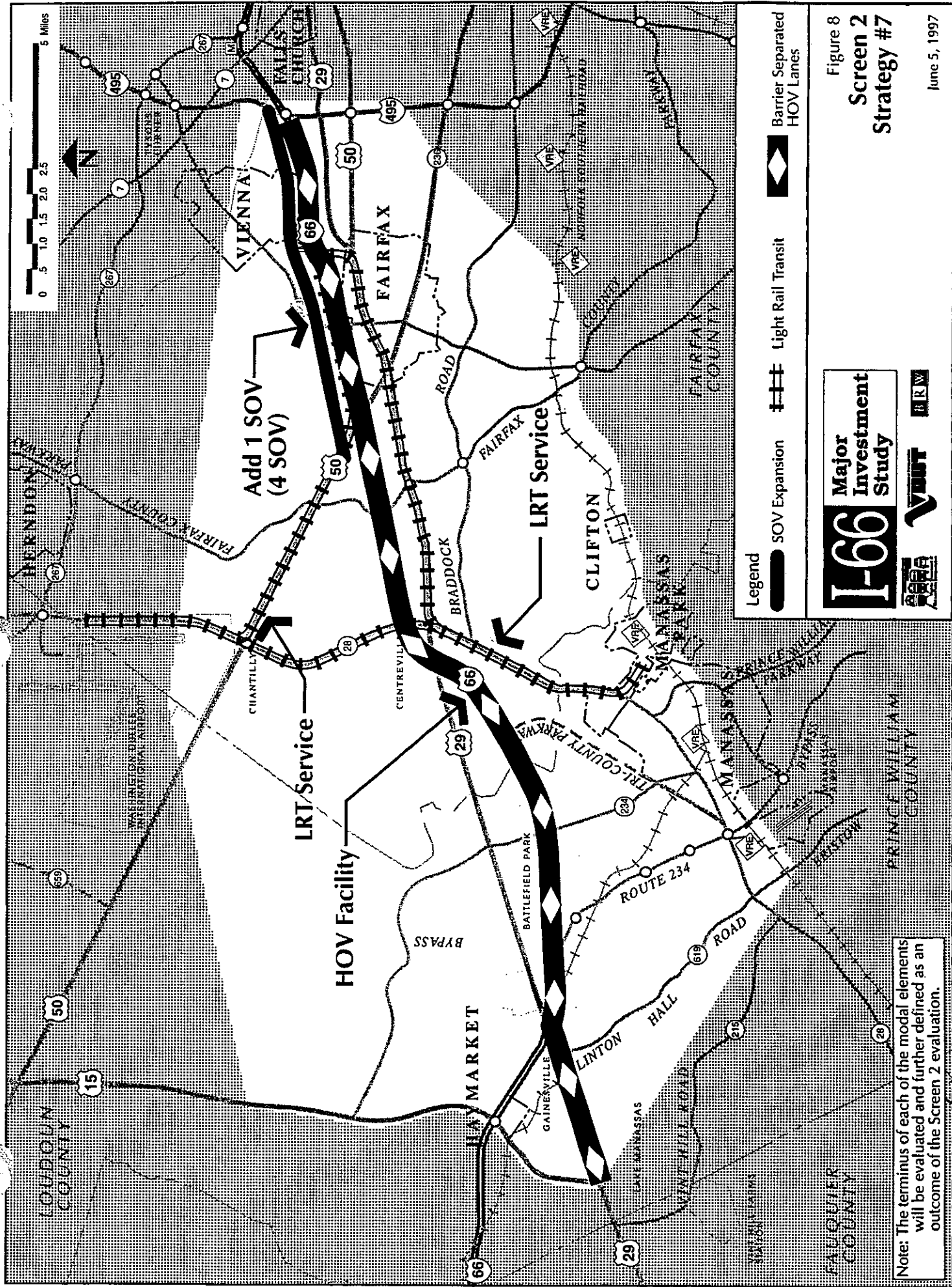
- Improvements to I-66 (only)
- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- LRT to Rt. 28/50 and Manassas

This strategy would combine additional SOV capacity on I-66 with barrier separated HOV and LRT service focused on the existing Metrorail terminus at Vienna. This strategy would not include additional SOV capacity on Route 29 or Route 50.

Improvements to I-66 would include construction of two, barrier-separated, reversible HOV lanes and adding a general purpose SOV lane in each direction. The HOV improvements would extend from I-495 west to Gainesville. The SOV improvements would extend from I-495 to Route 50. The HOV lanes would operate one-way eastbound in the morning and one-way westbound in the afternoon.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

LRT service connecting the Dulles Airport area, the Manassas area, and the Metrorail terminal station at Vienna would be provided.



Strategy #8 SOV+HOV+Metro

- Improvements to I-66, Rt. 29 and Rt. 50
- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- Metrorail extension to Centreville

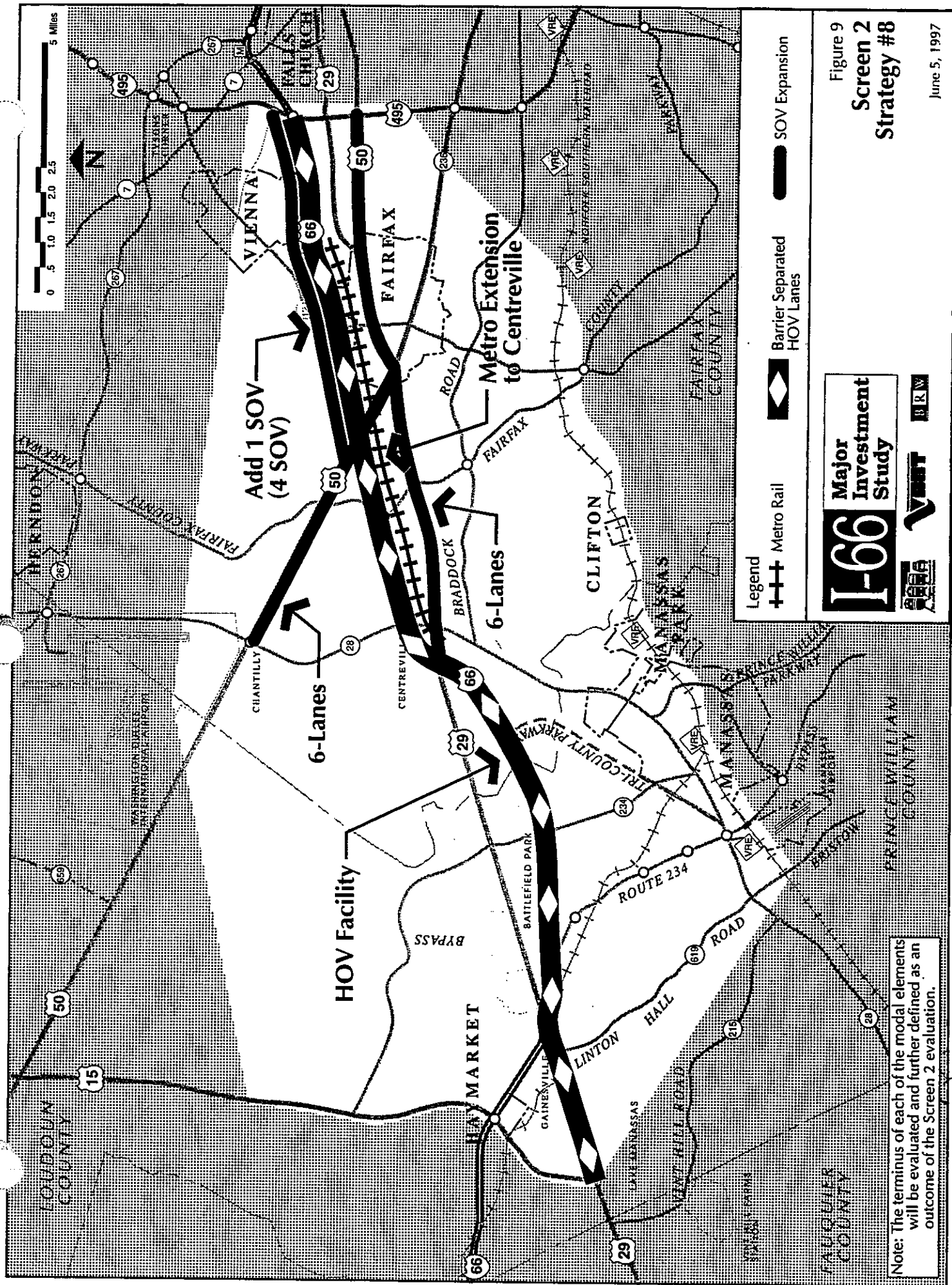
This strategy combines additional SOV capacity on I-66, Route 29 and Route 50, barrier separated HOV and extension of the existing Metrorail system to Centreville.

Improvements to I-66 would include construction of two, barrier-separated, reversible HOV lanes and adding a general purpose SOV lane in each direction. The HOV improvements would extend from I-495 west to Gainesville. The SOV improvements would extend from I-495 to Route 50. The HOV lanes would operate one-way eastbound in the morning and one-way westbound in the afternoon.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Route 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 would be widened to six-lane arterials. These roads would be configured as 'super-arterials' with grade separations at most cross street intersections.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.



June 5, 1997

Strategy #9 SOV+LRT+Metro

- Improvements to I-66, Rt. 29 and Rt. 50
- LRT to Rt. 28/50 and Manassas with connection at Centreville
- Metrorail extension to Centreville

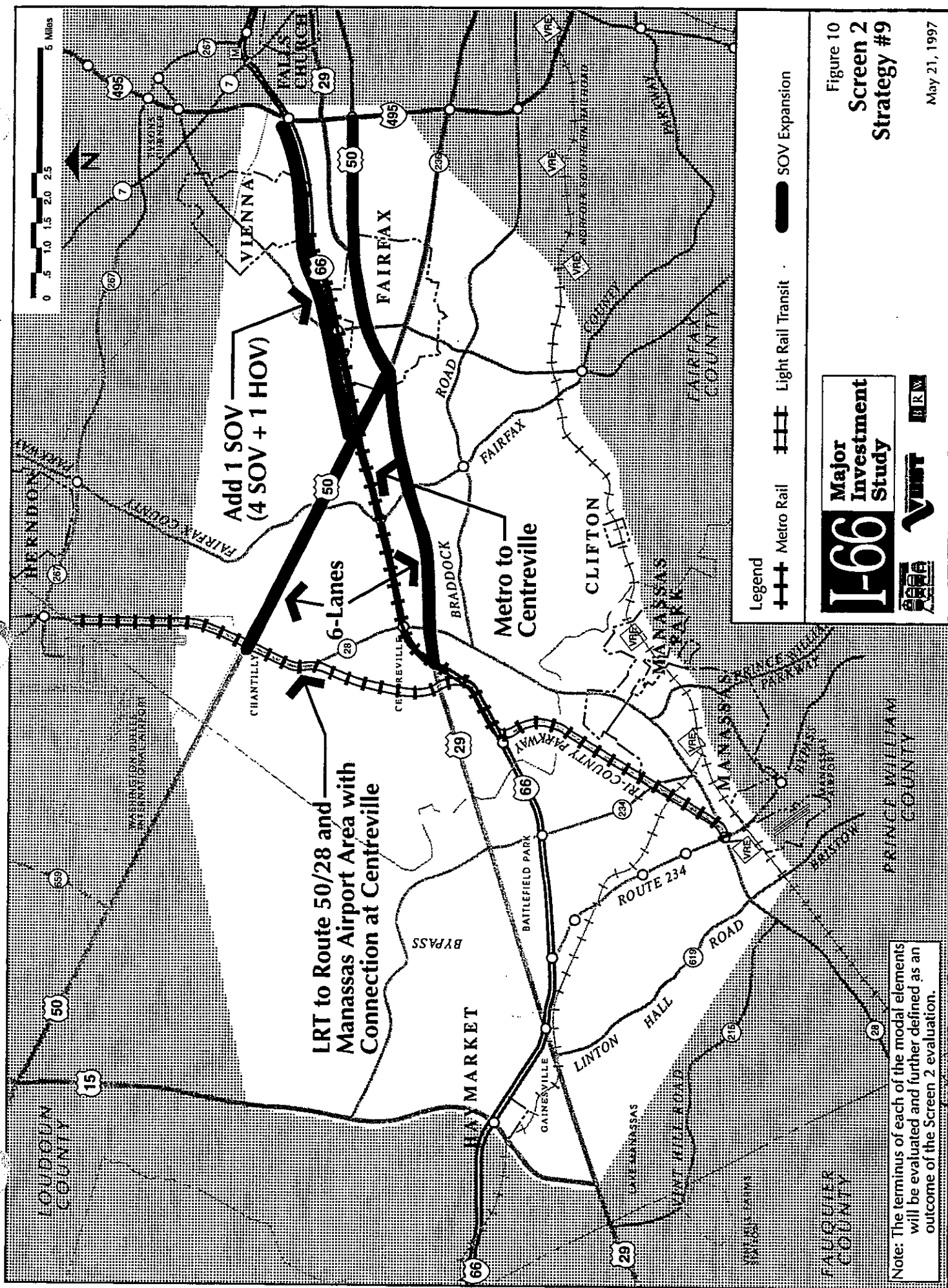
This strategy combines additional SOV capacity on I-66, Route 50 and Route 29 with LRT service focused on an extended Metrorail terminus station at Centreville.

The improvements to I-66 would add one additional SOV lane in each direction between I-495 and Route 50.

Route 29 from Fairfax Circle to Route 28 and Route 50 from I-495 to Route 28 would be widened to six-lane arterials. These roads would be configured as 'super-arterials' with grade separations at most cross street intersections.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.

There would be two LRT lines focused on the Centreville Metrorail station. The south LRT line follows the Route 28 Bypass south to the vicinity of Manassas Airport. The north LRT line would follow Stone Road to Route 28 to the vicinity of Dulles Airport.



Strategy #10 HOV+LRT+Metro

- Barrier separated HOV on I-66
- HOV extension on Rt. 29
- LRT to Rt. 28/50 and Manassas with connection at Centreville
- Metrorail extension to Centreville

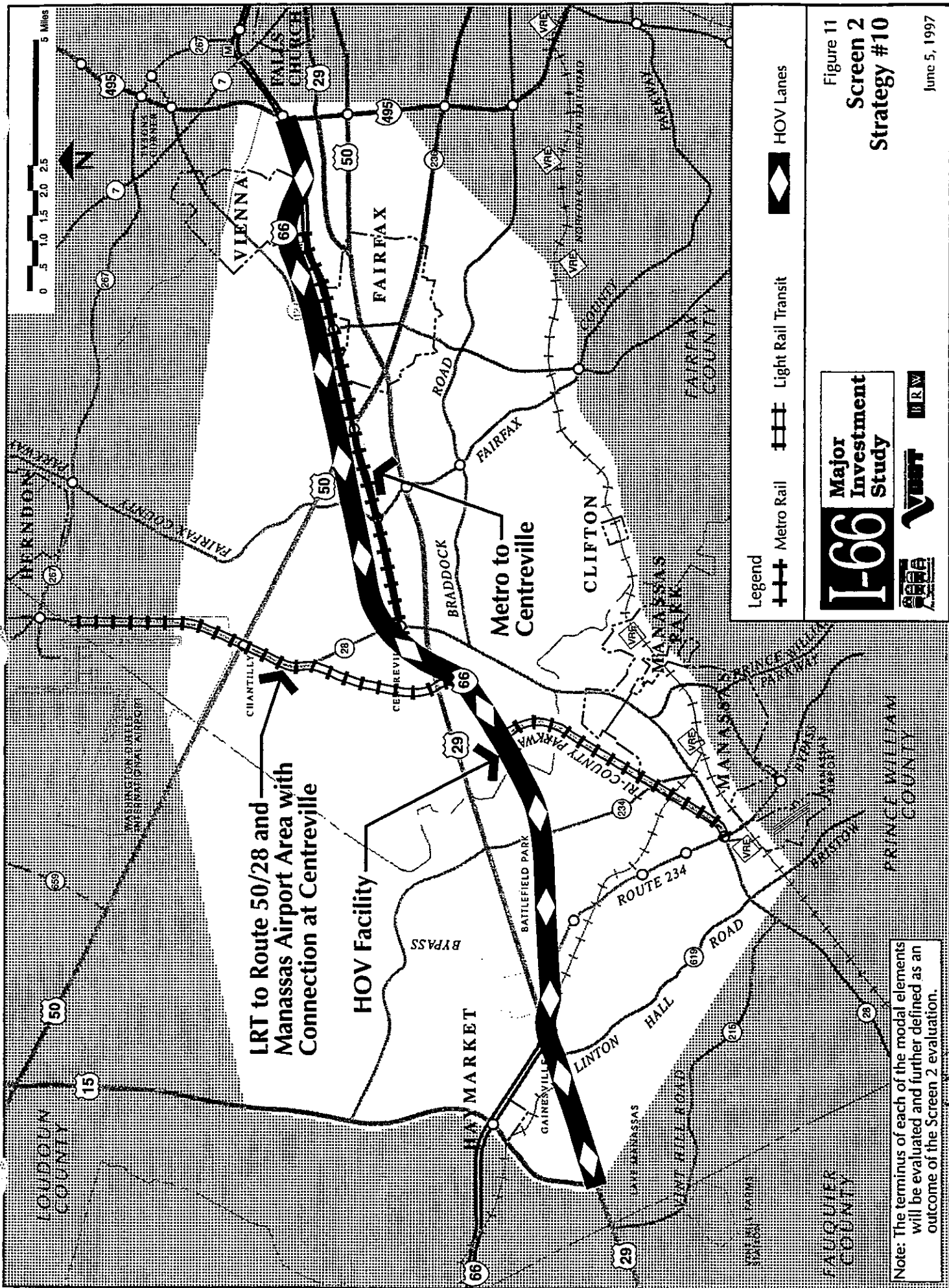
This strategy combines barrier separated HOV with LRT lines to Route 28/50 and Manassas serving an extended Metrorail terminus station at Centreville.

Improvements to I-66 would include construction of two, barrier-separated, reversible HOV lanes and adding a general purpose SOV lane in each direction. The HOV improvements would extend from I-495 west to Gainesville. The SOV improvements would extend from I-495 to Route 50. The HOV lanes would operate one-way eastbound in the morning and one-way westbound in the afternoon.

The I-66 HOV lanes would connect west from Gainesville down Route 29 to approximately Route 15. The Route 29 HOV lanes would likely be in the median of Route 29 and would likely have direct access to the I-66 HOV lanes.

Metrorail would be extended in the median of I-66 from the existing terminal station at Vienna to a new terminal station in the vicinity of Centreville with a number of intermediate station sites.

There would be two LRT lines focused on the Centreville Metrorail station. The south LRT line follows the Route 28 Bypass south to the vicinity of Manassas Airport. The north LRT line would follow Stone Road to Route 28 to the vicinity of Dulles Airport.



Strategy #11 I-66 Express/Local

- Widen I-66 to six lanes in each direction
- Widen I-495 to six lanes in each direction

This strategy would widen I-66 to six lanes in each direction with an express/local configuration. This strategy would also assume that I-495 is widened to six lanes with an express/local configuration consistent with the Recommended Strategy Package in the Capital Beltway Study MIS Results Report (January 1997).

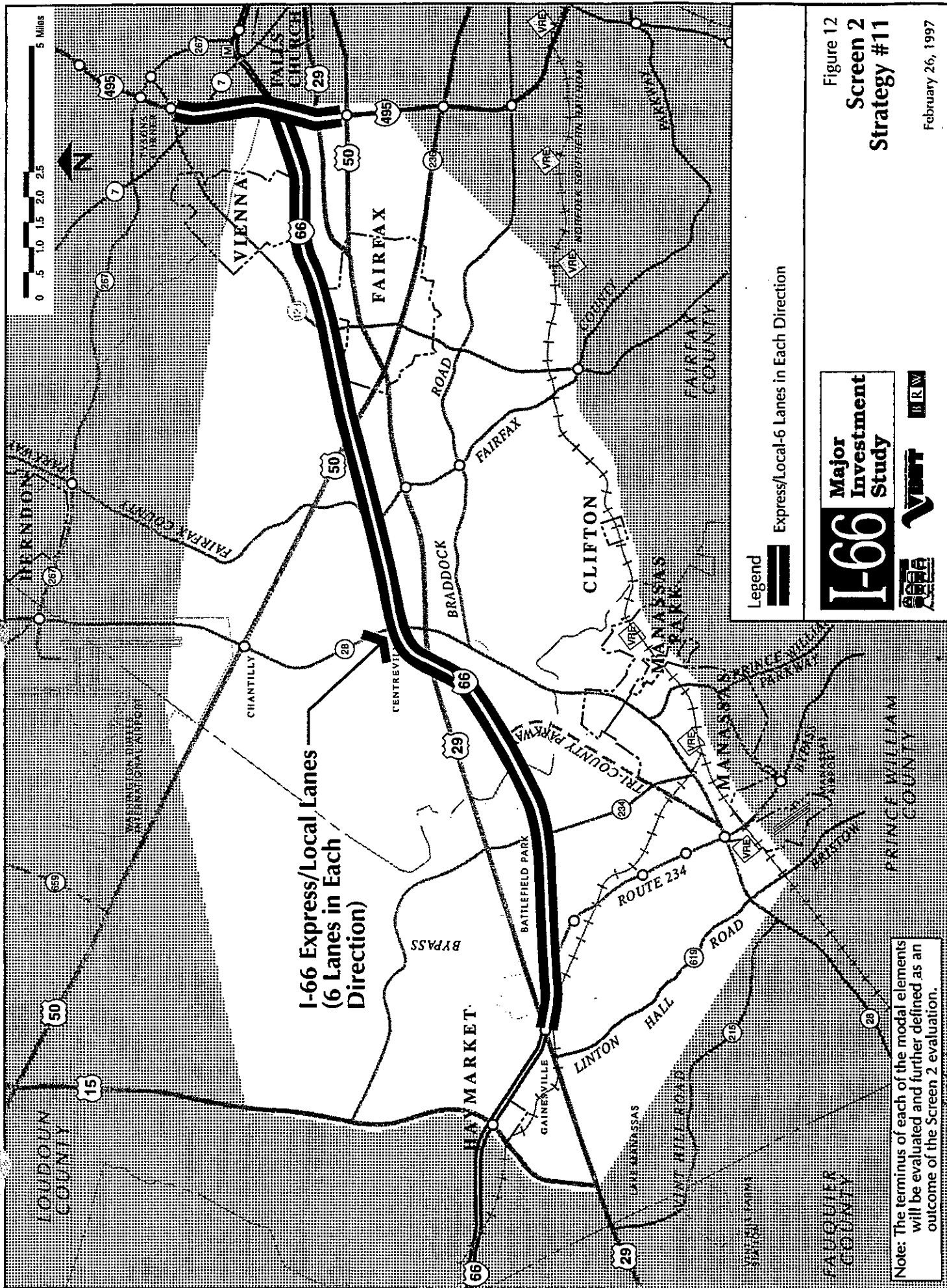


Figure 12
 Screen 2
 Strategy #11

February 26, 1997

Strategy #12 'Super Bus'

This strategy would consist of significant bus system improvements including extension of existing service, provision of new service between various origins and destinations, and reduced bus headways. This strategy would also include increased frequency of service on Metrorail to Vienna. This strategy was suggested by the TAC and is intended to represent a more flexible transit improvement than the fixed transit facilities that may better serve the travel patterns in the corridor.

Strategy #13 County Highway Plan

This strategy would include selected roadway improvements that are part of the County Comprehensive Plans but are not in the CLRP. The improvements to be included in the strategy will be defined in consultation with county staff. Preliminary recommendations for inclusion in this strategy include the following roadways:

- Tri-County Parkway
- Stone/Braddock Road Connector
- Rt. 234 Bypass north of I-66
- Rt. 236 upgrade to six lanes